ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde Incharge Principal Shri Krushnarao Ingle (Ex MLA)
President

Phone: 07266-237126

visit us at: www.acscwb.co.in

Email: 327accwb@gmail.com

Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

Session-2021-2022

Supporting Documents-A

1.1.1 Effective curriculum delivery through a well-planned and documented process

• Board of Studies. (BOS) Dr. Subhash Gurjar (Economics).

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE Official Publication of Sant Gadge Baba Arravati University



(EXTRA-ORDINARY) Wednesday, the 18th October, 2017 NOTIFICATION

No. 144/2017

Date: 18.10,2017

Subject :

Declaration of Results of Election to the University Senate,

Academic Council & Boards of Studies-2017 Notification (Extra-ordinary) No. 128/2017, dated 12.9.2017

As per provisions of uniform Statute 1/2017, I, Dr.Ajay P. Deshmukh, Registrar & Returning Officer, hereby notify for general information that the candidates mentioned in column No.3 of the following table are hereby declared elected as per provisions of Para 10(8) of the said Statute, AND elected in the election held on 15th October, 2017 for the University Senate, Academic Council & Boards of Studies from the Constituencies mentioned in column No.2 of the following table in accordance with the respective provisions of Sections 28(2), 32(3)(g) & 40(2)(c) of the Maharashtra Public Universities Act, 2016 alongwith Government Order dated 28.4.2017 in tune with section 27 of the Act...

As per provisions of Section 62(1) of the above said Act, the term of Members on the University Senate, Academic Council & Boards of Studies shall be for Five Years w.e.f. 1st September, 2017 irrespective of the date on which they entered upon their office.

.NO	NAME OF CONSTITUENCY	NAME AND ADDRESS OF CANDIDATES	REMARKS	
1	2	3	44	
	SENATE			
. т	EN Principals (u/s 28(2)(o))			
	(Scheduled Caste category)	 GHARDE DR. AVINASH NAMDEORAO* ARTS, COMMERCE & SCIENCE COLLEGE, MAREGAON, DIST. YAVATMAL 	(Elected)	
	(DT/NT category)	 MOTKE DR. SANJIV GOVINDRAO PHULSINGH NAIK MAHAVIDYALAYA, PUSAD. 	(Elected)	
	(OBC category)	KULAT DR. AMBADAS LAXMANRAO SHRI SHIVAJI ARTS, COMMERCE & SCIENCE COLLEGE, AKOT	(Elected)	v
	(Women category)	DESHMUKH DR.SANYOGITA SHRIKANT MATOSHRI VIMALABAI DESHMUKH MAHAVIDYALAYA , AMRAVATI	(Elected)	٠
	(General category)	THAKARE DR. SANTOSHRAO MADHAVRAO SHRI GADGE MAHARAI MAHAVIDYALAYA,MURTIZAPUR	(Elected)	
		2. GAWANDE NILESH NARAYANRAO LATE BHASKARRAO SHINGNE ARTS, PROF. F.N.G. SCIENCE & A.G. COMMERCE COLLEGE, SAKHARKHERDA,	(Elected)	
×		TA.SINDRHEDRAJA, DIST. BULDHANA 3. UMEKAR DR. RAJENDRA ANANDRAO 8.S.PATIL MAHAVIDYALAYA, ACHALPUR	(Elected)	
		CAMP, PARATWADA		

Arts SchinevidryoCzonSganner Warvet [Bakel] Dist- Bulden

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	SANT GADGE B.	ABA AMRAVATI UNIVERSITY GAZETTE - 2017 - PART I'WO -678
6.	6. Pali & Prakrit	
. 1		GEDAM RAIANI BHIMRAO (Declared Elected) DR. BABASAHEB AMBEDKAR MV., AMRAVATI.
. 1		2. MANWATKAR BANDU SHALIK (Declared Elected)
1		MADHUKARRAO PAWAR ARTS COLLEGE , MURTIZAPUH
• 1	30	3. WANKHADE DR. SAU. R.I. (Declared Elected)
	7. Persian & Arabic	TAKSHASHEELA COLLEGE, AMRAWATI.
	Traini & Arabic	1. IAMIL DR. M.Y. (Declared Elected)
		SMT.KESHARBAI LAHOTI MAHAVIDYALAYA, AMRAVATI
		Z. KHAN DR. AUAZ AHMAD KHAN LATIE KHAN (Declared Florted)
		THE NAME AZAD ARTS & COMMERCE
- 1		COLLEGE, BARSHI TAKLI 3. TAZI DR. ANJUM ZIAUDDIN (Declared Elected)
		G.S. SCIENCE, ARTS & COMMERCE
	10.Music	COLLEGE, KHAMGAON.
1	• 830000	1. GADRE DR. ABHAY ARVIND (Elected) SMT. S.R. MOHATA MAHILA
- 1		MAHAVIDYALAYA . KHAMGAON
		2. DAS SNEHASHISH JANAPRIYA (Elected) MAHILA MAHAVIDYALAYA, AMRAVATI.
		3. GHATE CHANDRAKIRAN RAM (Flashed)
		SMT.VATSALABAI NAIK MAHILA MAHAVIDYALAYA, PUSAD.
	(Social Sciences Group)	
	1. History	1. BANSOD SANTOSH PANDURANG (Flasted)
C. W.		SUMAN, BANGLOW, NEAR L.I.C. COLONY, RAM NAGAR, AMRAVATI
	a	2. CHANGOLE DR. MITIN VASANTRAD (Florted)
1		SHRI SHIVAJI ARTS & COMMERCE MAHAVIDYALAYA,AMRAVATI
1		3. BHORJAR DR. ASHOK NARAYANRAO (Elected) LATE N.A. DESHMUKH ARTS &
1		COMMERCE COLLEGE, CHANDUR BAZAR,
1	2 5	AMRAVATI
- 1	2. Economics	1. KUTE SANTOSH TUKARAM SMT.SINDHUTAI JADHAV ARTS & SCIENCE (Elected)
i	4.	MAHAVIDYALAYA, MEHKAR.
À	4	
	93	TA. SANGRAMPUR, DIST. BULDHANA 3. RAIPUT KARAMSHIG RAMSING (Florted)
		LOKMANYA TILAK MV., WANI
Į.	3. Political Science	I. CHAKWE DR. SUNIL BHAURAO (Declared Elected)
1		SHRI MUNGSAJI MAHARAJ
I		MAHAVIDYALAYA, DARWHA Z. GAWAI DR. SUBHASH SHAMRAO (Declared Elected)
1		SMT. SHAKUNTALABAI DHABEKAR
1		MAHAVIDYALAYA, KARANIA LAD
	or the first	3. NIMBALKAR NILESH RAMESHRAO (Declared Elected)
		SHRIPAD KRISHNA KOLHATKAR
	provide the second	MAHAVIDYALAYA ATTORON AMOU
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Shri Krushnarao Ingle (Ex MLA)
President

Email: 327accwb@gmail.com

Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

Session-2021-2022 RC/OC Supporting Documents-B

1.1.1 Effective curriculum delivery through a well-planned and documented process

Arts & Commerce College Warwat Bakal Orientation/ FIP, Refresher Course / Short Term Course, FDP List:

Sr.	Name of Teacher	Orientation/ FIP	Refresher Course	FDP
No	Traine of Teacher		/ Short T. C.	121
1.	Dr. Kishor Bhaskar Theng		04/10/201 to	
1.	DI. Kishoi Bhaskai Theng		16/10/2021	
2.	Dr. Satish Wasudeo Rane		30/11/2021 To	
۷.	DI. Satisfi Wasudeo Kane		13/12/2021	
3.	Dr. Megha Ranjit Solanke	07 To 09 June 2021	01 To 15	
٥.	Dr. Wegna Kanjit Solanke	07 10 09 Julie 2021	September 2021	
4.	Miss Sonali Anil Tayade	20 August to 03		
4.	Wiss Soliali Ailii Tayade	September 2021		
5.	Mr. Kiran Prakash Sabale			20 to 27
J.				September 2021

Principal
Arts & Commerce College,
Warvat Bakal Dist Buldana

Dr. Kishor Theng (04/10/2021 to 16/10/2021)



Dr. Satish Rane (30/11/2021 To 13/12/2021)



Dr. Megha Solanke (01 To 15 September 2021)



Prof. S. P. Aggarwal Principal & Director) TLC, Ramanujan College Teaching Learning Centre, Ramanujan College, University of Delhi

in collaboration with

Miranda House, University of Delhi under the aegis of MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING

This is to certify that

Dr. Megha Ranjit Solanke

Arts, Commerce College Warwat Bakal Dist-Buldhana, Maharashtra has successfully completed online Two – Week Refresher Course in "LIFE SCIENCES"

from 01 – 15 September, 2021 and obtained Grade A+.







Dr. Megha Solanke (07 To 09 June 2021)



Excelssior Education Society's K. C. COLLEGE OF ENGINEERING AND MANAGEMENT STUDIES & RESEARCH, THANE(E)



Affiliiated to Mumbai University, Approved by AICTE, DTE NAAC Accredited B++

CERTIFICATE OF PARTICIPATION

This is to certify that

Megha Ranjit Solanke

has attended online FDP on 'Research Funding Projects & IPR (Part II)' organized by R & D Cell, IQAC, and Department of EXTC, Computers & IT from 7th June 2021 to 9th June 2021.

DR. BABAN U. RINDHE Head, R & D Cell

DR. ARUNDHATI CHAKRABARTI

122 ghalati

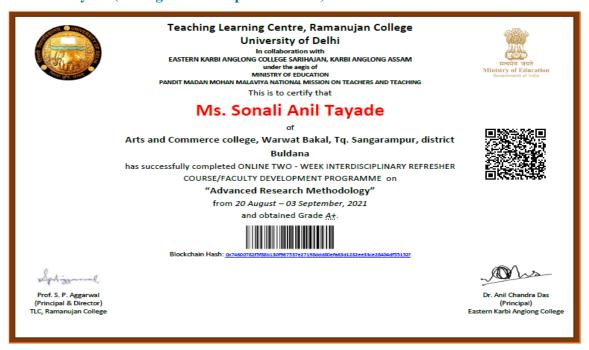
Head, IQAC

DR. VILAS NITNAWARE Principal

1.1.1 [B] RC/OC/STC

Page 4 of 5

Ms. Sonali Tayade (20 August to 03 September 2021)



Mr. Kiran Prakash Sabale (20 to 27 September 2021)



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President

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Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

Departmental Academic Calendar Session-2021-2022

Supporting Documents C

1.1.1 The institution ensures effective curriculum delivery through a well-planned and documented process

ARTS AND COMMERCE COLLEGE

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Shri. Krushnarao Ingle (Ex MLA) President

Email: 327accwb@gmail.com

CERTIFICATE

This is to certify that the documents attached as supporting documents for Criterion I:

Curricular Aspects are verified from the college record and found to be correct to the best of

my knowledge.

Principal
Arts & Commerce College,
Warvat Bakal Dist.Buldana

SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA

DEPARTMENT OF ENGLISH

DEPRTMENTAL CALENDAR 2021-22

Departmental Academic Calendar (2021-22)

Sr. No.	Particular	From	То
1.	First Session	30 th August, 2021	15 th January, 2022
2.	Diwali Vacation	1 st November, 2021	6 th November, 2021
3.	Second Session	17th January, 2022	31st May, 2022
4.	Summer Vacation	1st June, 2022	30th June, 2022

Days available during Academic Year 2021 - 2022

Sr.	Activity	Commenceme	ent Cessation	Total Days
No.	Activity	Commenceme	Cessation	Total Days
01	First Session	30/08/2021	15/01/2022	105
02	Admission Process	01/09/2021	18/09/2021	14
03	Teaching Days (Odd Semesters)	17/09/2021	15/01/2022	83
04	Induction Program for First Year Students	20/09/2021	25/09/2021	06
05	First Term Vacation	01/11/2021	06/11/2021	06
06	Odd Semesters University Exam	17/01/2022	05/02/2022	19
07	Second Session	17/01/2022	31/05/2022	109
08	Teaching Days (Even Semesters)	07/02/2022 31/05/2022		90
09	Second Term Vacation	01/06/2022	01/06/2022 30/06/2022	
10	Even Semesters University Exam	01/06/2022	30/06/2022	30
11	Commencement of next Academic session 2022-23	01/07/2022		
Sr. No. Public Holiday Day & Date				

Sr. No.	Public Holiday	Day & Date
01	Ganesh Chaturthi	Friday, 10 September, 2021
02	Gauri Pujan	Monday, 13 September, 2021
03	Gandhi Jayanti	Saturday, 02 October, 2021
04	Sarvpitri Amavasya	Wednesday, 06 October, 2021
05	Dasara	Friday,15 October,2021
06	Id E Milad	Tuesday, 19 October, 2021
07	Gurunanak Jayanti	Friday, 19 November, 2021
08	Christmas	Saturday, 25 December, 2021
09	Makarsankranti	Friday,14 January 2022
10	Republic Day	Wednesday, 26 January, 2022
11	Chhatrapati Shivaji Maharaj Jayanti	Saturday, 19 February, 2022
12	Mahashivratri	Tuesday, 1 March, 2022
13	Holi (Second Day)	Friday, 18 March, 2022
14	Gudi Padwa	Saturday, 02 April, 2022
15	Dr. Babasaheb Ambedkar Jayanti	Thursday, 14 April, 2022
16	Good Friday	Friday, 15 April, 2022
17	Ramjan Id	Tuesday,03 May, 2022
18	Buddha Pournima	Monday,16 MaY,2022

Time Table (2021-22)

Name of teacher: Mr. NISHIGANDH SATAV Subject: ENGLISH

Period	1	2	3	4	5	6
Day/Time	11:00 - 11:48	11:48 -12:36	12:36 1:24	1:34 - 2:22	2:22 - 3:10	3:10 - 3:58
MON	BA I		BA III	BA II		BA III (T)
TUE	BA III			BA I	BA II (T)	BA I (T)
WED	BA II		BA I	BA III	BA II (T)	BA III (T)
THUS	BA III (T)	BA II			BA I (T)	BA II (T)
FRI	BA II	BA I			BA I (T)	BA II (T)
SAT	7.30 - 8.18	8.18 - 9.06	9.06 - 9.54	10.04-10.52	10.52 - 11.40	11.40 - 12.28
			BA I (T)	BA III	BA III (T)	

Allotted Workload

Name of Teacher: Mr. NISHIGANDH SATAV Subject: ENGLISH

Sr. No.	Class	No	Donar Allottad		
S1. No.	Class	Lectures	Tutorials	Practical	Paper Allotted
1	BA I (A)	04	04		
2	BA II	04	04		
3	BA III	04	04		
4	NCC	03		03	

Total Workload per week (L+T+P) : 12 (L) + 12 (T) = 24 (19 hrs. 12 m)NCC : 03 (L) + 03 (P) = 06 (04 hrs.)

Time Table

Name of teacher: Mr. NAGESH INGLE Subject : ENGLISH

Period	1	2	3	4	5	6
Day/Time	11:00 -11:48	11:48 -12:36	12:36 1:24	1:34 - 2:22	2:22 - 3:10	3:10 - 3:58
MON	B.com I			B.Com III	B.com II	B.com I (T)
TUE	B.com I			B.sc I	B.com I (T)	B.com I (T)
WED	B.com I			B.sc I		B.com I (T)
THUS	B.com I		B.Com III	B.sc I		B.com I (T)
FRI	B.com II			B.sc I	B.com I (T)	
SAT	B.com II		B.Com III	B.com I (T)		B.sc I (T)

Allotted Workload

Name of Teacher: Mr. NAGESH INGLE

Subject: ENGLISH

Sr. No.	Class	No	Doman Allattad					
Sr. No.	Class	Lectures	Tutorials	Practical	Paper Allotted			
1	B.Com I	04	07					
2	B.Com II	03						
3	B.Com III	03						
4	B.sc I	04	01					
Total Worl	Total Workload per week (L+T): $14 (L) + 08 (T) = 22 (17 \text{ hrs. } 36 \text{ m})$							

Teaching Periods Available per month during the session 2021-22

Faculty: ARTS, COMMERCE & SCIENCE Subject: ENGLISH

	, ,	ODD SEMESTER									N SEMI	ESTER			
Class	Periods	A U G - 2 1	SEP T-21	OCT -21	NO V- 21	DEC -21	JAN -22	Total	JA N- 22	FEB -22	MA R-22	APR -21	MA Y- 21	JUN -21	Total
BA I	Theory		07	14	13	18	7	59		13	16	16	16		61
DAI	Tutorial		6	15	12	17	7	57		11	16	15	16		58
BA II	Theory		7	15	12	19	7	53		13	17	15	16		61
DA II	Tutorial		7	14	12	19	7	52		12	17	15	16		60
BA III	Theory		7	14	14	16	8	52		12	17	16	16		61
DAIN	Tutorial		7	15	13	17	8	53		12	18	15	16		61
B.Com I	Theory		04	16	14	18	08	60		13	18	15	15		61
B.Com 1	Tutorial		05	26	23	30	16	100		20	28	27	26		101
B.Com II	Theory		02	12	11	12	07	44		09	11	12	12		44
D.Com II	Tutorial														
B.Com	Theory		02	12	10	12	07	43		09	13	11	12		45
III	Tutorial														
BSc. I	Theory		04	15	14	19	08	80		12	17	15	16		57
DSC. I	Tutorial		00	04	04	03	03	14		02	04	04	04		14

		TEACHING PLAN FOR BA ENGLISH	.
	Sr. No.	Topic to be covered	Lectures Available
	0.1	EDUCATION PROVIDES A SOLID	0
	01	FOUNDATION	9
	02	LOVE STORY	9
Theory BA SEM I	03	SPEECH ON INDIAN INDEPENDENCE	9
	04	FILM MAKING	9
	05	IN THE BAZAARS OF HYDERABAD	8
ŀ			II.
	06	SHE WALKS IN BEAUTY	8
	07	MIDDLE AGE	7
	Sr. No.	Topic to be covered	Lectures Available
	01	PARTS OF SPEECH	10
	02	TENSES	10
	03	UNSEEN PASSAGE	8
	0.4	LETTER WRITING : PERSONAL AND	_
Tutorial	04	BUSINESS	7
BA SEM I	05	CURRICULUM VITAE	7
	03	PERSONAL INTERVIEW (INTERNAL	/
	06	ASSESSMENT)	6
ŀ	07		
	07	SEMINAR (INTERNAL ASSESSMENT)	6
	08	ASSIGNMENT (INTERNAL ASSESSMENT)	3
	Sr. No.	Topic to be covered	Lectures Available
	01	APPRO JRD	10
	02	PACKING	10
Theory	03	HOW I BECAME A PUBLIC SPEAKER	10
BA SEM II	04	VALUES IN LIFE	10
	05	MONEY MADNESS	7
	06	NO MEN ARE FOREIGN	7
	07	ANOTHER'S SORROW	7
	Sr. No.		Lectures Available
		Topic to be covered	
	01	SUBJECT VERB AGREEMENT	10
	02	VERBS: To be, to do, to have, Modals	10
	03	STORY BUILDING	7
Tutorial	04	E-COMMUNICATION	7
BA SEM II	05	NOTICE / AGENDA / MINUTES	7
DA SEMI II	0.0	READING SKILL (INTERNAL	
	06	ASSESSMENT)	6
	0.5	GROUP DISCUSSION (INTERNAL	_
	07	ASSESSMENT)	6
	08	ASSIGNMENT (INTERNAL ASSESSMENT)	5
	Sr. No.	Topic to be covered	Lectures Available
ŀ		INDIA'S MESSAGE TO THE WORLD	9
}	01 02	THE PLEASURES OF IGNORANCE	8
		LIDE PLEASURES OF IGNORANCE	ı X
ana a			
Theory	03	THE HAPPY PRINCE	8
BA SEM	03 04	THE HAPPY PRINCE THE THREE QUESTIONS	8 8
	03	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116	8 8 5
BA SEM	03 04	THE HAPPY PRINCE THE THREE QUESTIONS	8 8 5 5
BA SEM	03 04 05	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116	8 8 5
BA SEM	03 04 05 06	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE	8 8 5 5
BA SEM	03 04 05 06 07	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE	8 8 5 5 5
BA SEM	03 04 05 06 07 08 Sr. No.	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered	8 8 5 5 5 5
BA SEM	03 04 05 06 07 08 Sr. No.	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB	8 8 5 5 5 5 5 Lectures Available
BA SEM III	03 04 05 06 07 08 Sr. No. 01	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES	8 8 5 5 5 5 Lectures Available 10 10
BA SEM III	03 04 05 06 07 08 Sr. No. 01 02	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION	8 8 5 5 5 5 Lectures Available 10 10 8
BA SEM III Tutorial BA SEM	03 04 05 06 07 08 Sr. No. 01	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION	8 8 5 5 5 5 Lectures Available 10 10
BA SEM III	03 04 05 06 07 08 Sr. No. 01 02	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION PERSONALINTERVIEW (INTERNAL	8 8 5 5 5 5 Lectures Available 10 10 8
BA SEM III Tutorial BA SEM	03 04 05 06 07 08 Sr. No. 01 02 03 04	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION PERSONALINTERVIEW (INTERNAL ASSESSMENT)	8 8 5 5 5 5 Lectures Available 10 10 8 8
BA SEM III Tutorial BA SEM	03 04 05 06 07 08 Sr. No. 01 02 03 04 05	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION PERSONALINTERVIEW (INTERNAL ASSESSMENT) SEMINAR – PRESENTATION (INTERNAL	8 8 5 5 5 5 Lectures Available 10 10 8 8
BA SEM III Tutorial BA SEM	03 04 05 06 07 08 Sr. No. 01 02 03 04	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION PERSONALINTERVIEW (INTERNAL ASSESSMENT)	8 8 5 5 5 5 Lectures Available 10 10 8 8
BA SEM III Tutorial BA SEM	03 04 05 06 07 08 Sr. No. 01 02 03 04 05	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION PERSONALINTERVIEW (INTERNAL ASSESSMENT) SEMINAR – PRESENTATION (INTERNAL	8 8 5 5 5 5 Lectures Available 10 10 8 8 8
BA SEM III Tutorial BA SEM	03 04 05 06 07 08 Sr. No. 01 02 03 04 05	THE HAPPY PRINCE THE THREE QUESTIONS SONNET 116 DIRGE LEISURE A BABY SLEEPS AFTER PAIN Topic to be covered CLAUSES: MAIN / SUB TYPES OF SENTENCES TELEPHONE CONVERSATION INTERPERSONAL CONVERSATION PERSONALINTERVIEW (INTERNAL ASSESSMENT) SEMINAR – PRESENTATION (INTERNAL	8 8 5 5 5 5 Lectures Available 10 10 8 8

02	ON THE COMPLICT OF LIFE	
		9
		9
		9
		6
		6
		6
		6
		Lectures Available
01		12
02		12
	1	
03		10
04		10
05	PERSONAL INTERVIEW (INTERNAL	8
03	ASSESSMENT)	0
06	SEMINAR-PRESENTATION (INTERNAL	8
00	ASSESSMENT)	
Sr. No.		Lectures Available
01	THE OPEN WINDOW	9
02	THE THREE HERMITS	9
03	WHAT ID SWARAJ?	9
04	A LETTER TO HIS SON	9
05	BANGLE SELLERS	8
06	THE MOUNTAIN AND THE SQUIRREL	8
Sr. No.	Topic to be covered	Lectures Available
01	PRECIS WRITING	14
02	DEVELOPING A THOUGHT	14
02	PERSONAL INTERVIEW (INTERNAL	12
03	ASSESSMENT)	13
0.4	SEMINAR-PRESENTATION (INTERNAL	12
04	ASSESSMENT)	12
Cr. No	Topic to be covered	Lectures Available
SI. NO.	Topic to be covered	(61)
01	QUALITY	12
02	MISS BRILL	12
03	MY FINANCIAL CAREER	12
04	SOCRATES AND THE SCHOOLMASTER	12
05	THE SOLITARY REAPER	7
06	STAY CALM	6
Sr. No.	Topic to be covered	Lectures Available
01	REPORT WRITING	15
02	ESSAY WRITING	15
		1
03	ASSESSMENT)	15
	SEMINAR-PRESENTATION (INTERNAL	
04	SEMINAR-PRESENTATION (INTERNAL	16
	04 05 06 Sr. No. 01 02 03 04 05 06 Sr. No. 01 02 03 04 05 06 Sr. No. 01	03 THE GIRL 04 THE MAGIC SHOP 05 WHERE THE MIND IS WITHOUT FEAR 06 A LAMENT 07 LOVE IN LIFE 08 UP-HILL Sr. No. Topic to be covered 01 TRANSFORMATION OF SENTENCES (Simple/Compound/Complex) 03 INTERPERSONAL CONVERSATION 04 CASUAL CONVERSATION 05 PERSONAL INTERVIEW (INTERNAL ASSESSMENT) Sr. No. Topic to be covered 01 THE OPEN WINDOW 02 THE THREE HERMITS 03 WHAT ID SWARAJ? 04 A LETTER TO HIS SON 05 BANGLE SELLERS 06 THE MOUNTAIN AND THE SQUIRREL Sr. No. Topic to be covered 01 PRECIS WRITING 02 DEVELOPING A THOUGHT 03 PERSONAL INTERVIEW (INTERNAL ASSESSMENT) SF. No. Topic to be covered 01 PRECIS WRITING 02 DEVELOPING A THOUGHT 03 PERSONAL INTERVIEW (INTERNAL ASSESSMENT) SF. No. Topic to be covered 01 PRECIS WRITING 02 DEVELOPING A THOUGHT 03 PERSONAL INTERVIEW (INTERNAL ASSESSMENT) SF. No. Topic to be covered 01 QUALITY 02 MISS BRILL 03 MY FINANCIAL CAREER 04 SOCRATES AND THE SCHOOLMASTER 05 THE SOLITARY REAPER 06 STAY CALM Sr. No. Topic to be covered 01 REPORT WRITING 02 ESSAY WRITING 03 PERSONAL INTERVIEW (INTERNAL ASSESSMENT) 9 PERSONAL INTERVIEW (INTERNAL ASSESSMENT)

TEACHING PLAN FOR B. COM / BSC ENGLISH						
	Sr. No.	Topic to be covered	Lectures Available			
	01	The Eyes are not Here	10			
	02	The Romance of a Busy Broker	10			
Theory D. Com	03	Bores	10			
Theory B. Com SEM I	04	The Lost Child	10			
SENT	05	The World is Too Much With Us	7			
	06	Once Upon a Time	7			
	07	If	6			
Tutorial B.Com	Sr. No.	Topic to be covered	Lectures Available			
SEM I	01	Change the Narration	15			
SEM I	02	Articles	15			

	02	C	15
	03	Synonyms & Antonyms	15
	04	Tenses Form	15
	05	Resume Writing	10
	06	Letter Writing (Formal & Informal)	10
	07	Seminar For(Internal Assessment)	10
	08	Assignment (Internal Assessment)	10
	Sr. No.	Topic to be covered	Lectures Available
	01	Each is Great in His Own Place	10
	02	The Postmaster	10
Theory B.Com	03	How I Became a Public Speaker	07
SEM II	04	Prospects of Democracy in India	10
	05	Success is Counted Sweetest	8
	06	Laugh and Be Merry	8
	07	The Impossible Dream	8
	Sr. No.	Topic to be covered	Lectures Available
	01	Change the Voice	14
	02	Idioms & Phrase	12
	03	One Word Substitute	12
Tutorial B.Com	04	Preposition	12
SEM II	05	E- Mail	12
	06	News Paper Writing	13
	07	Seminar (Internal Assessment)	13
	08	Assignment (Internal Assessment)	13
	Sr. No.	Topic to be covered	Lectures Available
	01	Travel By Train	5
	02	Two Gentlemen of Verona	5
	03	Go! Kiss the World	5
	04	The Struggle for an Education Up From slavery	5
Theory B.Com	05	Where the Mind is without Fear	4
SEM III	06	Stopping by Woods on a Snowy evening	4
	07	Leisure	4
	08	The Daffodils	4
	09	An Introduction to Communication	2
	10	Notice, Agenda, Minutes	3
	11	Presentations	3
	Sr. No.	Topic to be covered	Lectures Available
	01	The Town Week	5
	02	Florence Nightingale	5
	03	The Gift of Magi	4
	04	Three Hermits	4
Theory B.Com	05	On His Blindness	4
SEM IV	06	Solitude	4
DEMI I V	07	Still I Rise	4
	08	Money Madness	4
	09	Interview and Interviewing Skills	4
	10		3
		Meeting Skills Nonverbal Communication	3
	11 Sr. No.	Nonverbal Communication	•
	Sr. No.	Topic to be covered	Lectures Available
	01	Ratan Tata	5
	02	Steve Jobs	5
	03	Vijay Bhatkar	5
	04	Black Money Black Economy	5
Theory B.Com	05	Red Red Rose	4
SEM V	06	It is needless to ask the Saint Caste	4
DENTI V	07	Love's Philosophy	4
	08	The Garden	4
	09	Paperless Office	3
	10	Video Conferencing	2
	11	E-Banking	2
Theory P Com	Sr. No.	Topic to be covered	Lectures Available
Theory B.Com	D1. 1 10.	Topic to be covered	Loctaros Francoio

SEM VI	01	SundarPichai	5
SEMI VI	02	MallikaSrinivasan	5
	03	Muhammad Yunus	4
		Introduction to the Right to information Act	4
			4
	05 All World's a Stage 06 How do I Love Thee		4
	07	The Duck and The Kangaroo	4
	08	Ode to Autumn	4
	09	Leadership Skills	2
	10	Teamwork Skills	2
	11	Time Management Skills	2
	12	Stress Management Skills	3
	13	Advertising Skins	2
	Sr. No.	Topic to be covered	Lectures Available
	01	The Child	8
	02		8
	03	A Simple Philosophy Values in Life	8
	03	Water: The Elixir of Life	8
Theory	05	Introduction to the Right to Information Act	8
BSc. SEM I	06	Say Not the struggle Naught Availeth God's Grandeur	6
07			6
	08	To Autumn	6
	09	Bangle Seller	6
	10	Stay Calm	6
	11	Curriculum Vitae	4
	12	Formal Letter	6
	Sr. No.	Topic to be covered	Lectures Available
Tutorial DCa	01 02	Part of Speech Articles	3 2
Tutorial BSc. SEM I			=
SENI I	03	Preposition	3
04		Tenses Transformation of Sentences	3 3
	05		
	Sr. No.	Topic to be covered	Lectures Available
	01	What is Courage?	5
	02	The Hazards of Food Colouring The Kabuliwallah	5 5
	03		5
		The Eyes Are not Here My Lort Dollar	5
Theory BSc.	05	My Lost Dollar A Psalm of Life	5
SEMI II	06		5
	08	O Captain! My Captain	5
		The Quality of Mercy	5
	09	Father Returning Home The World is Too Much With Us	5
	10	The World is Too Much With Us	
	11	Report Writing	4
	12	Paragraph Writing	4
	Sr. No.	Topic to be covered	Lectures Available
Tutorial BSc.		*	
SEM II	01	Part of Speech	2
SEM II	02	Articles	3
	03	Preposition	3
	04	Tenses Transformation of Sentences	3 3
		L TRUSTORMATION Of Nentences	1 1

DEPARTMENTAL PROGRAMS SCHEDULE (2021 - 22)

Sr. No.	Particulars	To be organized in
01	Teacher Day celebrates	05/09/2021
02	Online Welcome Program of First Year Students	04/10/2021
03	Online Bridge Course For First Year Students	05/10/2021 - 12/10/2021

04	Study Circle Formation	15/12/2021
05	Essay Competition on Savitribai Phule	30/12/2021
06	Workshop on Communication Skills	17/01/2022
07	Certificate Course in Enhancing Competence in English.	15/02/2022
09	Poetry Reading Session	15/02/2022
10	One Day National Level Virtual Conference on 'Indian	29/03/2022
	Sensibility in Indian writing in English'	
11	Developing Elocution skill session	18/04/2022
12	William Shakespeare Death Anniversary	23/04//2022
13	Writing Skill Session	10/05/2022

DEPARTMENTAL ACADEMIC ACTION PLAN 2021-22

	DEPARTMENTAL ACADEMIC ACTION PLAN 2021-22							
01	Name of the D	epartment	English					
02	Name of facult	ty members with qualification	1. Mr. Nishigandh Satav (M.A. English, M.Phil) 2. Mr. Nagesh Ingle (M.A. English, SET)					
03	Refresher Cou	rse/ Orientation Program/ Short Term Course/ Any	02					
03	Others to be pa	articipated						
		i) Book Publication	01					
		ii) Chapter in Book	02					
	Research Publication Plan	iii) Research Articles in UGC CARE listed	04					
		Journal						
		iv) Research Paper in conference/ seminar	02					
		(Presentation)						
04		v) Research Paper in conference/ seminar	04					
		proceeding (Publication)						
		vi) Conference/ Seminar/ Workshop (To be	06					
		attended)						
		vii) Ph. D registered/Ongoing/Awarded	01					
05	Conference/ Se	eminar/ Workshop (To be organized)	01					
06	Extension Acti	vities and Social Responsibility (to be participated)	02					
			Guest-Lecture					
07	Academic Act	ivities to be organized	Quiz Contest					
		Seminar						

Head, Dept. of English
Arts & Commerce College
Warvat Bakal

SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA

DEPARTMENT OF MARATHI

DEPRTMENTAL ACADEMIC CALENDAR 2021-22 MR. ANAND DHUNDALE

Departmental Academic Calendar (2021-22)

Departmental Academic Calendar (2021-22)								
Sr. No.	Activity	Commencemen	t	Cessation	Total Days			
01	First Session	30/08/2021	15/01/2022		105			
02	Admission Process	01/09/2021		18/09/2021	14			
03	Teaching Days (Odd Semesters)	27/09/2021		15/01/2021	83			
04	Induction Program for First Year Students	20/09/2021		25/09/2021	06			
05	First Term Vacation	01/11/2021		06/11/2021	06			
06	Odd Semesters University Exam	17/01/2022		05/02/2022	19			
07	Academic Session (Second Session)	17/01/2022		31/05/2022	109			
08	Teaching Days (Even Semesters)	07/02/2022		31/05/2022	90			
09	Second Term Vacation	01/06/2022		30/06/2022	26			
10	Even Semesters University Exam	01/06/2022		30/06/2022	30			
11	Commencement of next Academic session	01/07/2022						
Sr. No.	Public Hol	liday		Day & Date	2			
01	Ganesh Chaturthi			ay, 10 September, 2021				
02	Gauri Poojan			nday, 13 September, 202	.1			
03	Mahatma Gandhi Jayanti		Saturday,02 October, 2021					
04	Sarvpitri Amavasya		Wednesday, 06 October, 2021					
05	Dasara		Friday, 15 October, 2021					
06	Id E Milad		Saturday,02 October, 2021					
07	Gurunanak Jayanti		Friday, 19 November, 2021					
08	Christmas			Saturday,25 December, 2021				
10	Mahashivratri			Friday, 14 January, 2022				
11	Republic Day			Wednesday, 26 January, 2022				
12	Chhatrapati Shivaji Maharaj Jayanti Mahashivratri			Saturday, 19 February, 2022				
13	Holi (Second Day)			Tuesday,01 March,2022 Friday, 18 March, 2022				
14	GudhiPadwa			Saturday, 02 April,2022				
15	Dr. Babasaheb Ambedkar	Iavanti	Thursday, 14 April, 2022					
16	GoRamzan Id (Id-Ui-Fitan			sday, 03 May, 2022				
17	Buddha Pournima	· /		nday, 16 May, 2022				
			1.101	,,,,				

Time Table Faculty : ARTS Subject : MARATHI & MLT

Peri	od	1	2	3	4	5	6
Day		11:00 to	11:48 to 12:36	12:36 to	1:34 to	2:22 to	3:10 to
Tin	ie	11:48	12:30	1:24	2:22	3:10	3:58
МО	N		I(MAR)	II (MLT)	III (MLT)		I (MLT)
TU	Е	II (MLT)	III (MAR)	I (MLT)			III (MLT)
WE	D	I (MAR)	III (MLT)			I (MLT)	II (MLT)
THU	JS			II (MLT)	I (MLT)		III (MLT)
FR	Ι	III (MAR)	III (MLT)	I (MAR)			
SA	T		I (MAR)	II (MLT)		I (MLT)	

Allotted Workload

Subject: MARATHI & MLT Year: 2021-22

Sr.	Class	No.	veek	Paper	
No.	Class	Lectures	Tutorials	Practical	Allotted
1	BA I (A) (MAR) (MLT)	04 05			
2	BA II MLT	05			
3	BA III MAR MLT	04 05			
4	NCC				

Total Workload per week (L+T+P) : 23 (L) = 23 (18 hrs. 24 m)

Teaching Periods Available per month during the session 2021-22

Faculty: ARTS Subject: Marathi & MLT

ODD SEMESTER								*		ESTER		
						· -				, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Class	Periods	SEPT-21	OCT- 21	NOV- 21	DEC -21	JAN- 22	Total	FEB- 21	MAR - 22	APR -22	MAY-22	Total
BA I	Theory	02	16	06	17	17	58	15	15	16	12	58
MAR	Tutorial											
BA I	Theory	04	19	11	21	21	76	19	22	19	20	80
MLT	Tutorial	-	-	-	-	-	-	-	-	-	-	-
BA II	Theory	04	19	11	21	21	76	19	22	19	20	80
MLT	Tutorial											
BA III	Theory	02	15	07	17	17	58	15	16	15	16	62
MAR	Tutorial	-	-	-	-	-	-	-	-	-	-	-
BA III	Theory	03	18	11	23	20	75	20	21	19	20	80
MLT	Tutorial		-			-	1				1	

Teaching	Plan for Theory (First Semester)	Class: B A Part I MARATHI	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	विभाग अ — (वैचारिक)	(24)	
01	1) जीवन आणि शिक्षण – विनोबा भावे	08	
03	२) ध्येयांची पराकाष्ठा – साने गुरुजी	08	
03	3) चालाल तर वाचाल ! — अभय बंग	08	
	ललित विभाग – ब (ललित	(15)	
01	1) आंगण – मधुकर केचे	05	
02	२) अन्वरशा फकीर	05	
03	३) इर्जिक – अरुण जाखडे	0	
	विभाग- क (कविता)		
01	1) संतवाणी		
01	अ) संत ज्ञानेश्वर	02 02	
	ब) संत सावता माळी	02	
02	२) स्फूर्ती - केशवसुत	02	
00	3) या झोपडीत माझ्या - राष्ट्रसंत तुकडोजी	02	
03	महारा ज	02	
04	४) आता - नामदेव ढसाळ	03	
05	५) शेतकरी राजा - शंकर बढे	02	
06	६) भंगार - अजीम नवाज राही	02	
	विभाग ड) व्यवहारिक मराठी		
	लेखन विषयक नियम (संदर्भग्रंथ : उपयोजित		
01	मराठीमधील प्रकरण १५ वे	02	
	म्द्रितशोधन : (संदर्भग्रंथ : उपयोजित मराठीमधील		
02	प्रकरण १६ वे	02	
_	Plan for Tutorial (First Semester)	Class: B A Part I MLT	T
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
अ)	अ) कादंबरी तहान	(44)	
01	1 प्रास्ताविक	06	
02	2 वाङ्ग्मय प्रकाराची संकल्पना	09	
03	3 साहित्याचे प्रकार उदा. कथा कविता कादंबरी	08	
	नाटक इत्यादी.		
04	4 तहान चे कथानक	06	
05	5 तहान मधील पात्र परिचय	06	
06	6 वाङ्ग्मयीन मुल्यमापन	06	
07	7 समारोप	03	
ৰ)	कविता : अर्वाचीन मराठी कविता (संपादित)	(36)	
	1) केशवसुत : अ) तुतारी		
1	ब) नवा शिपाई	05	
	क) आम्ही कोण ?		
2	2) बा. सी. मर्ढेकर: अ) भंगू दे काठीण्य माझे	06	

	T	T	1
	ब) गणपत वाणी		
	क) ह्या गंगेमध्ये		
	3) बा. भ.बोरकर: अ) जीवन त्यांना कळले हो		
3	ब) मज लोभस हा इहलोक हवा	06	
	क) जिने गंगीघाचे पाणी		
	4) कुसुमाग्रज : अ) अहिनकुल		
4	ब) हिमला	06	
	क) आगगाडी आणि जमीन		
	5) इंदिरा संत : अ) मृण्मयी		
5	ब) हाकेवर आहे गाव	05	
	क) झुंजावत		
	6) नारायण सुर्वे : अ) चार शब्द		
6	ब) दोन दिवस	04	
	क) कठीण होत आहे		
	7) वी.दा. करंदीकर :		
_	अ) माझ्या मना बन दगड		
7	ब) ती जनता अमर आहे	04	
	क) सब घोडे बारा टक्के		
	.,		
		Class : B A Part II MLT	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
आ)	निवडक मराठी कथा- संपादित	(42)	
ৰ)	संत तुकारामांचे निवडक अभंग संपादित	(34)	
	कथाकार कथा		
01	द.मा. मिरासदार - माझ्या बापाची पेंड	05	
02	शंकर पाटील - देशी उपाय	05	
03	व्यंकटेश माडगुलकर - रामा मैलकुली	05	
04	उद्भव शेळके - माय	05	
05	वामन होवाळ - मजल्याच घर	05	
06	गंगाधर गाडगीळ - किडलेले मानसे	05	
07	जयंत नारळीकर - ट्रॉय चा घोडा	05	
08	कमल देसाई - माणसाची गोष्ट	03	
09 10	वा. कृ. चोरघडे - संस्कार राजन गवस - हंदका	02 02	
10	राजन गयस - हुदका	02	
ৰ)	संत तुकारामांचे निवडक अभंग संपादित	(34)	
	1) प्रास्ताविक	04	
	2) तुकारामांचा परिचय	03	
	3) तुकारामांचे काव्याचे स्वरूप	03	
	4) वारकरी समप्रदायातील तुकारामांचे स्थान	03	
	5) आई वडील मन/ प्रयत्न	03	
	6) काम चुकाराच्या सबबी/ खडतर परीक्षा	03	
	7) काळ वेळ, शेती, गृहस्त जिवन	03	
	8) सच्या गुणांचा उत्स्फूर्त आविष्कार, विवेक,	04	
	स्वानुभव	U 4	

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जानंद		९) निसर्ग, कसे वागू नये, कसे वागावे, उपदेश कशासाठी	04	
Sr. No. Topic to be covered Lectures Available Lectures Utilized विभाग अ — (वैपादिक) (24)58 (24)58 01 शेतक-व्याचा असूड — मुक्के 08 02 मंडबळ गब्दे यंबळ — वी. टा. सावरकर 08 03 बुद्धी: मणसाची खरी शक्ती- दादा धर्मीधिकारी 08 01 लोक-जीवनातील वृक्षपूजा - द. ता भीसले 05 02 पाणी - अस्कर 05 03 दहा पेशाचा तमाशा - मुकूंद टाकसाळे 05 03 दहा पेशाचा तमाशा - मुकूंद टाकसाळे 05 04 संतवाणी: 31 तुकराम 01 05 संतवाणी: 31 तुकराम 01 01 संतवाणी: 31 तुकराम 01 02 औदुंबर - बातकवी 03 03 गाव - गेस 03 04 जीवनाचा शोध धेताना - वाहक सोनवणे 03 05 ब्यत्वा पुसली मानवतेशी - शोकनाचा थेवंत 02 06 तिमाग झा एक्स पुसली मानवतेशी (04) 02 प्रायत्वा के			04	
Sr. No. Topic to be covered Lectures Available Lectures Utilized विभाग अ — (वैपादिक) (24)58 (24)58 01 शेतक-व्याचा असूड — मुक्के 08 02 मंडबळ गब्दे यंबळ — वी. टा. सावरकर 08 03 बुद्धी: मणसाची खरी शक्ती- दादा धर्मीधिकारी 08 01 लोक-जीवनातील वृक्षपूजा - द. ता भीसले 05 02 पाणी - अस्कर 05 03 दहा पेशाचा तमाशा - मुकूंद टाकसाळे 05 03 दहा पेशाचा तमाशा - मुकूंद टाकसाळे 05 04 संतवाणी: 31 तुकराम 01 05 संतवाणी: 31 तुकराम 01 01 संतवाणी: 31 तुकराम 01 02 औदुंबर - बातकवी 03 03 गाव - गेस 03 04 जीवनाचा शोध धेताना - वाहक सोनवणे 03 05 ब्यत्वा पुसली मानवतेशी - शोकनाचा थेवंत 02 06 तिमाग झा एक्स पुसली मानवतेशी (04) 02 प्रायत्वा के				
विभाग अ - (वैचारिक) (24)58				T / TT/11 1
01 शेतक-याचा असूड – म. फुले 08 02 मंत्रवळ महदे यत्रवळ – वी. दा. सावरकर 08 03 बुद्धी: माणसाची खरी शक्ती- दादा धर्माधिकारी 08 स्वित्त विभाग – ब (त्रवित्त (15) पाणी	Sr. No.	-		Lectures Utilized
02 मंबबळ नदो यंबळ - वी. दा. सावरकर 08 वुर्धी : माणसाची खरी शकती-दादा धर्माधिकारी 08			· · ·	
व्यव्हार्या : माणसायी यरी शक्ती-दादा धर्माधिकारी 08	01		08	
स्तित विभाग - ब (स्तित (15) तो कोकजीवनातीत वृह्मपूजा - द. ता भोसते 05 पणि पंतृत्विव पणि - भास्कर 05 पंतृत्विव पणि - भास्कर 05 पंतृत्विव विभाग - क (स्तिता) (15) विभाग - क (स्तिता) (15) (15) (15) (15) (15) (15) (15) (15	02		08	
01 लोकजीवनातील वृक्षपूजा - द. त. भोसले 05 02 पाणी - भास्कर 05 03 दहा पैशाचा तमाशा - मुकुंद टाक्साळे 05 (विभाग- क (कविता)) (15) 01 संतवाणी: अ) तुकाराम 01 01 संतवाणी: अ) तुकाराम 01 02 औदुंबर - बालकवी 03 03 गाव - येस 03 04 जीवनाचा शोध घेताना - वाहक सोनवणे 03 05 ब्ततासाठी हतीला मारण्याये गणित 02 दतातासाठी हतीला मारण्याये गणित - लोकनाथ यशवंत 02 विभाग ड) व्यवहारिक मराठी (04) 01 अहवाल लेखन (संदर्भप्रंथ: उपयोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता पराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता पराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता भारति पराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी 02 02 परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील प्रकरण १७ वे मधील बातमी हिस्ता कार परायोजित मराठीमधील परायोजित मराठीमधील परायोजित मराठीमधील	03	बुद्धी : माणसाची खरी शक्ती- दादा धर्माधिकारी	08	
102 पाणी		ललित विभाग – ब (ललित	(15)	
चंदनशिव 05	01	लोकजीवनातील वृक्षपूजा - द. ता भोसले	05	
विश्वाग तमाशा - मुकुंद टाकसाळे 05	02		05	
संतवाणी : अ) तुकाराम 01 व) रामदास 01 व) रामदास 01 व) रामदास 01 02 अौदुंबर - बालकवी 03 03 04 जीवनाचा शोध घेताना - ग्रेस 03 05 खूनच पुसली मानवतेची - सुखदेव ढानके 02 विसाग हो हतीला मारण्याचे गणित - लोकनाथ यशवंत 02 04 04 04 04 04 04 04	03	· ·	05	
संतवाणी : अ) तुकाराम 01 व) रामदास 01 व) रामदास 01 व) रामदास 01 02 अौदुंबर - बालकवी 03 03 04 जीवनाचा शोध घेताना - ग्रेस 03 05 खूनच पुसली मानवतेची - सुखदेव ढानके 02 विसाग हो हतीला मारण्याचे गणित - लोकनाथ यशवंत 02 04 04 04 04 04 04 04				
1 व रामदास 01 02 औदंबर		विभाग- क (कविता)	(15)	
व) रामदास 01 02 ओंदुंबर	01	संतवाणी : अ) तुकाराम	01	
03 गांव - ग्रेस 03 04 जीवनाचा शोध घेताना - वाहरू सोनवणे 03 05 खूनच पुसली मानवतेची - सुखदेव ढानके 02 06 विरंगुळा 07 07 07 07 07 07 07 0	01	ब) रामदास	01	
104 जीवनाचा शोध घेताना - वाहरू सोनवणं 03 05 खूनच पुसली मानवतेची - सुखदेव ढानके 02 विभाग ड] व्यवहारिक मराठी 02 02 02 02 03 04 04 04 04 04 04 04	02	औदुंबर - बालकवी	03	
05 खूनच पुसली मानवतेची - सुखदेव ढानके 02 06 दातासाठी हतीला मारण्याचे गणित 02 - लोकनाथ यशवंत 00 01 अहवाल लेखन (संदर्भप्रंथ : उपयोजित मराठीमधील प्रकरण १२ वे 02 प्रसार मध्यमासाठी लेखन वृत्तलेखन : (संदर्भप्रंथ : उपयोजित मराठीमधील प्रकरण १७ वे मधील बातमी लेहावी कशी हा घटक 02 Teaching Plan for Theory (Five Semester) Sr. No. Topic to be covered Lectures Available Lectures Utilized 01 31) मिरासदारी- लेखक- द.मा.मिरासदार (42) 1) नत्यानवबादची एक सफर 02 02 2) भृताचा जन्म 02 02 3) धडपनारी मुले 02 02 4) व्यंकुची शिकवणी 02 02 5) शिवाजीचे हस्ताक्षर 02 02 6) कोणे एके काळी 02 02 7) नदीकाटचा प्रकार 01 02 8) शाळेतील समारंभ 02 02 9) माझी पहिली चोरी 02 03 १०) विरंगुळा 03 03 ११) निरोप 02 02	03	गाव - ग्रेस	03	
विभाग ड) व्यवहारिक मराठी (04)	04	जीवनाचा शोध घेताना - वाहरू सोनवणे	03	
1	05	खूनच पुसली मानवतेची - सुखदेव ढानके	02	
विभाग ड) व्यवहारिक मराठी (04)	06		02	
प्रकरण १२ वे प्रसार मध्यमासाठी लेखन वृत्तलेखन : (संदर्भग्रंथ : उपयोजित मराठीमधील प्रकरण १७ वे मधील बातमी लिहावी कशी हा घटक			(04)	
02 उपयोजित मराठीमधील प्रकरण १७ वे मधील बातमी लिहावी कशी हा घटक 02 Teaching Plan for Theory (Five Semester) Sr. No. Topic to be covered Lectures Available Lectures Utilized 01 3) मिरासदारी- लेखक- द.मा.मिरासदार (42) (42) 1) नव्यानवबादची एक सफर 02 02 2) भुताचा जन्म 02 02 4) व्यंकुची शिकवणी 02 02 5) शिवाजीचे हस्ताक्षर 02 02 6) कोणे एके काळी 02 02 7) नदीकाठचा प्रकार 01 02 8) शाळेतील समारंभ 02 02 १० विरंगुळा 03 03 ११) निरोप 02 02	01		02	
Sr. No. Topic to be covered Lectures Available Lectures Utilized 01 अ) मिरासदारी- लेखक- द.मा.मिरासदार (42) 1) नव्यानवबादची एक सफर 02 2) भुताचा जन्म 02 3) धडपनारी मुले 02 4) व्यंकुची शिकवणी 02 5) शिवाजीचे हस्ताक्षर 02 6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02	02	उपयोजित मराठीमधील प्रकरण १७ वे मधील बातमी	02	
01 अ) मिरासदारी- लेखक- द.मा.मिरासदार (42) 1) नव्यानवबादची एक सफर 02 2) भुताचा जन्म 02 3) धडपनारी मुले 02 4) व्यंकुची शिकवणी 02 5) शिवाजीचे हस्ताक्षर 02 6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02				
1) नव्यानवबादची एक सफर 2) भुताचा जन्म 02 3) धडपनारी मुले 02 4) व्यंकुची शिकवणी 02 5) शिवाजीचे हस्ताक्षर 02 6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप				Lectures Utilized
2) भुताचा जन्म 02 3) धडपनारी मुले 02 4) व्यंकुची शिकवणी 02 5) शिवाजीचे हस्ताक्षर 02 6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १० विरंगुळा 03 ११ निरोप 02	01		· · ·	
3) धडपनारी मुले 02 4) व्यंकुची शिकवणी 02 5) शिवाजीचे हस्ताक्षर 02 6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02		, ,		
4) व्यंकुची शिकवणी 02 5) शिवाजीचे हस्ताक्षर 02 6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02		, , ,		
5) शिवाजीचे हस्ताक्षर		<u> </u>		
6) कोणे एके काळी 02 7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02		, , , , , , , , , , , , , , , , , , ,		
7) नदीकाठचा प्रकार 01 8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02				
8) शाळेतील समारंभ 02 ९) माझी पहिली चोरी 02 १०) विरंगुळा 03 ११) निरोप 02		,	02	
 ९) माझी पहिली चोरी १०) विरंगुळा ११) निरोप १०) विरंगुळा 		,		
१०) विरंगुळा 03 ११) निरोप 02			02	
११) निरोप 02		, , ,	02	
· ·		1	03	
१२) माझ्या बापाची पेंड 03		११) निरोप	02	
		१२) माझ्या बापाची पेंड	03	

1	1) तरुणांनो ! निर्भय बणा, शूर बना	09	
	विभाग अ) वैचारिक	(22)	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
Teaching	Plan for Tutorial (Second Semester)	Class: B A Part I MARATHI	
	९) साहित्यकाचे संवेदनशीलताशैशववृत्ती	01	
	8) साहित्यकाचे व्यक्तिव आणि त्याचा दृशिकोन	01	
	7) अनुभव समृद्धी आणि विद्वता	01	
	6) प्रतिभा व्यापार व स्वप्नव्यापार	02	
	5) चम्त्कृतिशक्ती	01	
	4) स्पूर्ती	01	
	3) कल्पना शक्ती	01	
	2) प्रतिभा	01	
	1) प्रास्ताविक	01	
	क) प्रकरण ३- साहित्याची निर्मितीप्रक्रिया	(10)	
	7) आनंद देणे इत्यादी.	01	
	6) प्रचार करणे	01	
	5) उपदेश करणे व बोध देणे	02	
	4) लेखकाच्या दृष्टीकोनातुय प्रयोजन	02	
	3) प्रयोजन व परिणाम	01	
	2) इतर विद्या शाखा व साहित्य	02	
	1) प्रयोजन म्हणजे काय?	01	
	ब) प्रकरण २- साहित्याचे प्रयोजन	(10)	
	8) समारोप	01	
	7) अनुभवाची विशीष्टता आणि विश्वास्मक्ता	01	
	6) साहित्यातील वैचारीक्ता, सेन्द्रीयत्व	02	
	5) साहित्यातील भावनान्मक्ता	01	
	4) साहित्यातील संवेदनात्मकता	02	
	3) वास्तव आणि कल्पित	02	
	2) साहित्यातुन व्यक्त होणार्या अनुभवाचे विशेष	02	
	1) शास्त्रीय वाङ्ग्मय आणि साहित्य	02	
	अ) प्रकरण १ – साहित्याचे स्वरूप	(13)	
02	ब) साहित्य विचार- संपादक - डॉ. दत्तात्रय पुंडे. डॉ. स्नेहल तावरे		
	२२) चोरी : एक प्रकार	01	
	२१) बाबू शेलाराचे धाडस	01	
	२०) पंचनामा	02	
	१९) स्पर्श	02	
	१७) पाऊस १८) ड्रोइंग मास्तरांचा तास	02	
	१६) आजारी पडण्याचा प्रयोग	02	
	१५) झोप	02	
	१४) साक्षीदार	02	
	१३) गवत	02	

	- स्वामी विवेकानंद		
2	2) वैज्ञानिक दृष्टीकोन	06	
	- नरेंद्र दाभोळकर		
3	3) स्त्री शूद्रांचा राजा छत्रपती शिवराय - चंद्रशेखर शिखरे	07	
	विभाग ब) ललित	(16)	
1	1) हतीचा दृष्टांत — केशिराज बास	02	
2	2) अल्पभूधारक - बाबाराव मुसळे	07	
3	3) वसंत वेणा - मीनल येवले	07	
	विभाग क) कविता	(16)	
	1) संतवाणी - अ) नामदेव	02	
1	ब) जनाबाई	02	
2	2) तयास मानव म्हणावे का? – सावित्रीबाई फुले	03	
3	3) चाफा – बी	03	
4	4) गेले तुटून पंख — शिवा राऊत	02	
5	5) योद्धा – मलिका अमर शेख	02	
6	6)माय – स. ग. पाचपोळ	02	
	विभाग ड) व्यवहारिक मराठी	(04)	
1	1) कार्यालयीन पत्र व्यवहार – संदर्भ ग्रंथ: उपयोजित मराठी मधील प्रकरण 3 रे	02	
2	2) स्वपरिचय पत्र नोकरीसाठी अर्ज लेखन- संदर्भ ग्रंथ: उपयोजित मराठी मधील प्रकरण ४ थे .	02	
	Plan for Theory (Second Semester)	Class: B A Part I MLT	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	नाटकः आई रिटायर होतेय - अशोक पाटोळे	(34)	
20	अर्वाचीन मराठी कविता - (संपादित)	(39)	
अ)	नाटक: आई रिटायर होतेय - अशोक पाटोळे	0.5	
01	नाट्य संकल्पनेचा परिचय	05	
02	नाट्य वांग्मयाचा संशिप्त इतिहास	04	
03	अशोक पडोळे यांच्या साहित्य प्रवासाचा परिचय	02	
04	आई रिटायर्ड होते या नाटकाचे कथानक	06	
05	नाटकातील पात्राचा परिचय	05	
06	वाण्गमयीन मुल्यमापन	03	
07	स्त्रीप्रदान नाटक म्हणजे आई रिटायर्ड होते	06	
08	समारोप	03	
ৰ)	अर्वाचीन मराठी कविता (संपादित)		
	कवी/कवयित्री कविता		
01	8) सुरेश भट — अ) उषःकाल होता होता	06	

	ब) एवढे दे पांडुरंगा क) साय		
	9) दिलीप चित्रे -		
	अ) शतके		
02	ब) देवा ह्याही देशात पाऊस पाड	06	
	क) हरवले जेथे ज्ञानदेव तुकाराम		
	10) यशवंत मनोहर –		
03	अ) मी येतो तेव्हा	06	
	ब) तडफड		
	क) मोडलो मी नाही		
	11) ना. धो महानोर -		
	अ) या नभाने या भुईला		
04	ब) मीच माझा एककल्ली	05	
	क) मोडलेल्या माणसाचे		
	दुःख ओले झेलताना		
	12) विठ्ठल वाघ –		
05	अ) मेंढरं	06	
05	ब) साहेबराव पाटील	06	
	क) माणूस		
	13) प्रभू राजगडकर -		
	अ) मल्टी अटीट्युड		
06	टॉवर्डस् आदिवासी	05	
	ब) गोंगल्		
	क) निकाल		
	14) कल्पना द्धाळ –		
) अ) चूल		
07	ब) बाय व गाय	05	
	, क) मायेच्या पदराखालून		
Teaching	Plan for Tutorial (Fourth Semester)	Class: B A Part II MLT	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	अ) आत्मकथन- आठवणीचे पक्षी लेखक प्र. ई.	(44)	
	सोनकांबळे	(,	
02	ब) लीळाचरित्रातील निवडक कथा- संपादक- राजेंद्र	(30)	
02	राऊत	(30)	
	अ)आत्मकथन- आठवणीचे पक्षी		
	1) प्रास्ताविक	05	
	2) दलित साहित्याचा संक्षिप्त इतिहास	06	
	3) दलित स्वकथना ची वहिवाट	05	
	4) आत्मकथनाची कथा	12	
	5) कथना तील मुख्य पात्र	09	
	6) कथनाचे वांग्मयीन मूल्यमापन	05	
	7) समारोप	02	
	ब) लीळाचरित्रातील निवडक कथा		
	<u> </u>	1	<u> </u>

	1) प्रास्ताविक	04	
	2) महानुभाव यांचे साहित्य	03	
	<u> </u>		
	3) लीळाचरित्र च्या निमित्ताने	04	
	4) लीळाचरित्रातील कथाकथन	09	
	5) लीळाचरित्र च्या आधारे चक्रधरांचे व्यक्तित्व	03	
	6) लीळाचरित्राचा मुख्य विषय (चक्रधर स्वामी)	02	
	7) सामाजिक व वांग्मयीन मूल्यमापन	03	
7D 11	8) समारोप	02	
Sr. No.	Plan for Theory (Sixth Semester) Topic to be covered	Class: B A Part III MARATHI Lectures Available	Lectures Utilized
2111(0)	विभाग अ) वैचारिक	(25)	Zectores compos
01	1) डॉ. पंजाबराव देशमुख – - डॉ. वी. भी. कोलते	08	
02	2)राजर्षी शाहू: वसा आणि वारसा — गोविंद पानसरे	07	
03	3)स्वराज्य सकल्पिका राष्ट्रमाता जिजाऊ – अशोक राणा	10	
	विभाग ब) ललित	(18)	
01	1)मरणाहून आपेश वोखटे — भाऊसाहेबांची बखर	05	
02	2)अरणी — मारुती चितमपल्ली	07	
03	3)ढग – संखा कलाल	06	
	विभाग क) कविता	(15)	
01	1) पोरसवदा होतीस — बा.सी. मर्ढेकर	04	
02	2) विझता विझता स्वतःला 🕒 नारायण सुर्वे	04	
03	3) बैलाचा मृत्यू — वसंत आ. डहाके	02	
04	4) काय कराल? - ना. क्. कवठेकर	03	
05	5) शेतकरी – बबन सराडकर	02	
	विभाग ड) व्यवहारिक मराठी	(04)	
01	1) जाहिरात निवेदन - संदर्भ ग्रंथ : उपयोजित मराठी मधील प्रकरण 6 वे	02	
02	2) जाहिरात लेखन - संदर्भ ग्रंथ: उपयोजित	02	
Tanglete	मराठी मधील प्रकरण 8 वे	Clear D A HIMIT	
Sr. No.	Plan for Theory(Sixth Semester) Topic to be covered	Class: B A III MLT Lectures Available	Lectures Utilized
01	1) एक होता कार्व्हर – अनुवाद – वीना गवाणकर	(50)	3
	1) प्रास्ताविक	06	
	2) चरित्रांचा थोडक्यात इतिहास	06	
	3) अन्वादित आत्मचरित्रांचा परिचय	06	
	4) मनोगताच्या निमित्याने	04	
	5) मेरीचं पोर, ज्ञानासाठी दाही दिशा	04	
	6) प्रारंभाचा शेवट , स्वातंत्र्य ग्रस्त, विपन्न ऑलाबॉमा	06	

	7) 'मी येत आहे' , कर्मभूमीत, अंगा आली रे अअंगणी	05	
	8) केमर्जीस्ट, पोरा तू आम्हाला धन्य केलेस, मी न माझा पूर्ण	05	
	9) विज्ञान तुम्हाला स्वतंत्र बनवील, भूमिपुत्र, दुरितांचे तिमिर जावो	04	
	10) सुखिया जाला, महानिर्वाण, कार्व्हर यांच्या समाधीवरील शिलालेख, जॉर्ज वॉशिंग्टन कार्व्हर जीवन प्रवास, समारोप	04	
02	2) भाषा विज्ञान परिचय – संपादक- डॉ. मालशे, डॉ. पुंडे , डॉ. अंजली सोमण	(30)	
	1) भाषेचे स्वरूप आणि उपयोग	12	
	2) स्वनविज्ञान	09	
	3) स्वनिम विचार	09	

PROGRAMS SCHEDULE (2021 - 22)

Sr.	Particulars	To be organized in
No.		
01	प्रवेशित विद्यार्थ्यांचे स्वागत	सप्टे २०२१
02	गांघी जयंती	२ ऑक्टो २०२१
03	अब्दुल कलाम जयंती/वाचन प्रेरणा दिन	१५ ऑक्टो २०२१
	आभासी पद्धतीने साजरा	
04	मराठी अभ्यास मंडळाचे उदघाटन	१५ जानेवारी २०२१
05	वाचन प्रेरणादिन	३० आक्टो २०२१
06	साने गुरुजी जयंती	२४ डिसेंबर २०२१
08	संविधान दिवस	२८ नोव्हेंबर २०२१
09	आभासी काव्य वाचन	मे २०२१
11	अभ्यासक्रम सिंव्हावलोकन	जून २०२१ जुलै २०२१
12	आभासी विद्यापीठ परीक्षा मार्गदर्शन	जुलै २०२१



ARTS & COMMERCE COLLEGE

WARVAT BAKAL DIST- BULDANA



DEPRTMENTAL ACADEMIC

CALENDAR 2021–22

	1	nic Calendar	(2021-22)	1				
Sr. No.	Activity	Commencemen	t Cessation	Total	Total Days			
01	First Session	30/08/2021	15/01/2022	10	105			
02	Admission Process	01/09/2021	18/09/2021	1	14			
03	Teaching Days (Odd Semesters)	27/09/2021	15/01/2022	83	83			
04	Induction Program for First Year Students	20/09/2021	25/09/2021	0	6			
05	First Term Vacation	01/11/2021	06/11/2021	0	6			
06	Odd Semesters University Exam	17/01/2022	05/02/2022	1	9			
07	Teaching Days (Even Semesters)	07/02/2022	31/05/2022	90	90			
08	Second Term Vacation	01/06/2022	30/06/2022	2	6			
09	Even Semesters University Exam	01/06/2021	30/06/2022	3	30			
10	Commencement of next Academic	01/07/2022						
	session							
G 37								
Sr. No.	Public Hol	liday	Day & Date					
01	Ganesh Chaturthi Gauri Punjan		Friday, 10 September, 20 Monday, 13 September, 2					
03	Gandhi Jayanti		Saturday, 02 October, 202					
04	Sarvpitri Amavasya		Wednesday, 06 October,					
05	Dasara		Friday,15 October,2021					
06	Id E Milad		Tuesday, 19 October, 202	21				
07	Gurunanak Jayanti		Friday, 19 November, 202					
08	Christmas		Saturday, 25 December, 2021					
09	Makar sankranti		Friday,14 January 2022					
10	Republic Day		Wednesday, 26 January, 2	2022				
11	Chhatrapati Shivaji Mahar	raj Jayanti	Saturday, 19 February, 20					
12	Mahashivratri	•	Tuesday, 1 March, 2022					
13	Holi (Second Day)		Friday, 18 March, 2022					
14	Gudi Padwa		Saturday, 02 April, 2022					
15	Dr. Babasaheb Ambedkar	Jayanti	Thursday, 14 April, 2022					
16	Good Friday		Friday, 15 April, 2022					
17	Ramjan Id		Tuesday,03 May, 2022					

Time Table

Faculty: ARTS Subject: Economics

racuity.	Subject.	Economics				
Period	1	2	3	4	5	6
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to
Time	11:48	12:36	1:24	2:22	3:10	3:58
MON	III		I		II	
TUE		II	III			
WED			II	I		
THUS	I		III			
FRI		II		I		III
	7.30 to	8.18 to	9.06 to	10.04 to	10.52 to	11.40 to
SAT	8.18	9.06	9.54	10.52	11.40	12.28
	I	II		II		

Allotted Workload

Subject : Economics Year : 2021-22

_		et i Beamanne.				
	Sr.	Class	No.	Paper		
	No.	Class	Lectures Tutorials P		Practical	Paper Allotted
	1	BAI(A)	05			
	2	BA II	05			
	3	BA III	05			

Total Workload per week 15 (Theory) = 15 (12 hrs.)

Teaching Periods Available per month during the session 2021-22

Faculty: ARTS Subject: Economics

			ODD SEMESTER									EVEN S	EMEST	ER	
Class	Periods	AUG- 21	SEPT -21	OCT -21	NOV -21	DEC -21	JAN -22	Total	JAN - 22	FEB -22	MAR -22	April -22	MAY -22	JUN- 22	Total
BA I	Theory	01	20	19	15	22	10	87	10	18	21	19	20	00	88
BA II	Theory	00	00	03	16	21	10	50	10	18	20	20	20	00	88
BA III	Theory	00	00	08	16	22	10	56	11	18	20	19	20	00	88

		TEACHING PLAN OF DEPARTMENT OF ECONOMICS	
	Sr. No.	Topic to be covered	Lectures Available
	01	Introduction to Economics	18
Theory	02	Demand and Supply	18
BA SEM I	03	Cost and Revenue Analysis	17
	04	Market Structures	17
	05	Factors of Production	17
Theory BA SEM II	Sr. No.	Topic to be covered	Lectures Available
	01	Geographical and Economy Features of Maharashtra	18
	02	Population Features of Maharashtra	18
	03	Agricultural Economy	17
	04	Industry and Infrastructure in Maharashtra	17
	05	Economy of Vidarbha	18
	Sr. No.	Topic to be covered	Lectures Available
	01	Introduction to Macro Economics	10
Theory	02	Money and Value of Money	10
BA SEM III	03	Inflation and Deflation	10
	04	Production and Employment	11
	05	International Trade	09
	Sr. No.	Topic to be covered	Lectures Available
	01	Commercial bank	18
Theory	02	Central Bank	18
BA SEM IV	03	Co-operative Bank and Nabard	18
	04	International Monetary Fund & World Bank	17
	05	Recent Servicesin banking Sector	17
	Sr. No.	Topic to be covered	Lectures Available
	01	Indian Economy and Planning	12
Theory	02	Agriculture	11
BA SEM V	03	Industry	11
	04	External sectors and Important areas of concern	11
	05	Environment and pollution	11
	Sr. No.	Topic to be covered	Lectures Available
	01	Introduction of Demography	18
Theory	02	Fertality and Mortality	17
BA SEM VI	03	Migration of population	18
	04	Urbanization of population	17
	05	Population and Development	18

ACADEMIC ACTION PLAN 2021-22

Department of Economics

01	Name of the Department Economics Economics				
02	Name of faculty n	nembers with qualification	Dr.Subhash Gurjar (M.A.Eco,M.phil,Ph.d,SET)		
03	Refresher Course, Any Others	Orientation Program/ Short Term Course/	01		
04	Research Publication	i) Book Publication	01		
		ii) Chapter in Book	01		
		iii) Research Articles in UGC CARE listed Journal	01		
		iv) Research Paper in conference/ seminar (Presentation)	02		
		v) Research Paper in conference/ seminar proceeding (Publication)	01		
		vi) Conference/ Seminar/ Workshop (To be attended)	03		
		vii) Resource Person/ Chairperson	01		
		viii) Ph. D registered/Ongoing/Awarded	Awarded		
		xv) Ph. D guide and no. of students registered /to be registered under	Ph.d Guide		
		xvi) Minor/ Major Project			
05	Conference/ Semi	01			
06	Collaboration	01			
07	Consultancy	Nil			
08	Extension Activitie	es and Social Responsibility	Social awareness program		
09	(Guest lecture, cla celebration of birt	es to be organized ass room seminar, contest, education tour, th and death anniversary of national leaders, uest faculties etc.)	Guest lecture :- 01 Seminar :- 02 Education tour :- 02 Bank visit :- 01 Farm visit :- 01		
10	Innovative and Best Practices Name of the title of the practice. Introduction Objectives Theme/ context The practice Evidence of success Problems encountered and resources required		Banking awareness		
11	Any other if you w	vish to add			
12	Curriculum Enrich University)	Paper setting Moderation Discuss the cullabus			
			Discuss the syllabus		

Head, Dept. of Economics
Arts & Commerce College
Warvat Bakal

SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA DEPARTMENT OF POL-SCIENCE DEPRTMENTAL ACADEMIC **CALENDAR 2021-2022**

Depar	rtmental Acadei	nic Calendar (2021-2022)				
Sr. No.	Activity	Commencement	Cessation	Total D	ays		
01	First Session	30/08/2021	15/01/2022	105			
02	Admission Process	01/09/2021	18/09/2021	14			
	Teaching Days (Odd	27/09/2021	15/01/2022				
03	Semesters)	21/05/2021	10/01/2022		83		
04	Academic Session						
V4	(Second Session)	17/01/2022	31/05/2022	109			
	` '			+			
05	Induction Program for First Year	20/09/2021	25/09/2021	06			
	Students						
06	First Term Vacation	01/11/2021	06/11/2021	06			
00		01/11/2021	00/11/2021	00			
07	Odd Semesters	17/01/2022	05/02/2022	19			
	UniversityExam		31/05/2022				
09		Ceaching Days (Even 07/02/2022			90		
0,	SemIster)				70		
10	Second Term	01/06/2022	30/06/2022	26	26		
	Vacation						
11	Even Semesters	01/06/2022	30/06/2022	30			
11	University Exam	01/00/2022	30/00/2022	30			
12	Commencement of	$-1 \Omega 1/\Omega I/\Omega \Omega \Omega$					
12	next Academic	01/07/2022					
	session						
Sr. No.	Public 1	Holiday	Day & Date				
01							
02	Ganesh Chaturthi		Friday 10 September 2021				
03	Gauri Pujan		Monday 13 September 2021				
04	Gandhi Jayanti			Saturday 02 October 2021			
05	Sarvpitri Amavasya		Wednesday 06 Octo				
06	Dasara		Friday, 15 October				
07	Id E Milad		Tuesday 19 October				
08	Gurunanak Jayanti		Friday 19 November				
09	Christmas		Saturday 25 Decem				
10 11	Republic Day Chhatrapati Shivaji Maha	roi Iovonti	Wednesday 26 Janu Saturday 19 Februa				
12	Mahashivratri	iraj Jayanu	Tuesday 01March,	•			
13	Holi (Second Day)		Friday 18 March, 20				
14	Good Friday		Friday, 15 April, 20				
15	Dr. Babasaheb Ambedkar	r Javanti	Thursday 14 April,				
16	Ramzan Id	· ·· · · · · · · · · · · · · · · · · ·		Tuesday, 03 May, 2022			
	Buddha Pournima.		Monday 16 May 20				

Time Table

Faculty: ARTS Subject: Pol-Science

1 wown of 1 11112								
Period	1	2	3	4	5	6		
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to		
Time	11:48	12:36	1:24	2:22	3:10	3:58		
MON	II	III			I			
TUE	I		II	III				
WED		I	III					
THUS	III	I	II					
FRI			II	III				
SAT	II			I				

Allotted Workload

Subject : Pol-Science Year : 2021-2022

Buoject .	1 of Belefiee		2021 2022			
Sr.	Class	No.	of periods per v	week	Paper	
No.	Class	Lectures	Tutorials	Practical	Allotted	
1	BA I (A)	05	-			
2	BA II	05	-			
3	BA III	05	-			
	Total	15		-		

Total Workload per week – 15 Period

Faculty: ARTS Subject : Pol-Science

	ODD SEMESTER									EVE	N SEM	ESTER		
Class	Periods	A U G- 21	SEP T-21	OCT -21	NO V- 21	DEC -21	JA N - 22	TOT AL	FEB- 22	M AR -22	APR -22	MA Y- 22	JUN -22	Total
BA I	Theory	-	12	16	15	16	10	69	16	18	19	20	-	73
BA II	Theory	-	10	15	14	15	09	63	15	16	21	18	-	70
BA III	Theory	-	12	14	15	13	10	64	16	14	20	17	-	67

Teaching	Plan for Theory Class : B A Pa		Pol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Unit-I	21	
02	Unit-II	19	
03	Unit-III	20	
04	Unit-IV	19	
05	Unit-V	20	
Teaching	Plan for Theory Class: B A Part I -		ol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Election Commission of India	18	
02	State Executive	15	
03	State Legislature of Maharashtra	13	
04	Local Seif Government of Maharashtra	14	
05	Women Participation in Panchayat Raj	15	
Teaching	Plan for Theory Class: B A Part I	I -(Third Semester)	SUB: Pol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Constitution of U.K.	20	
02	Parliamentary System of U.K.	19	
03	Constitution of U.S.A.	20	
04	Legislature of U.S.A.	19	
05	SAARC	20	
Teaching	Plan for Theory Class: B A Part II		ol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Constitution Of CHINA	18	
02	Executive Of China	15	
03	United Nation Organization (UNO)	14	
04	Strcture of UNO	14	
05	Indo-China Relations –Major Issues	15	
Teaching	Plan for Theory Class: B A Part	III (Fifth Semester) SUB : Pol	l-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Leadership	21	
02	Reservation	19	
03	Nationalism	20	
04	Communalism	19	
05	Terrorism	20	
	<u> </u>	(Sixth Semester) SUB: Pol-S	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Concept of State	18	
02	Concept of Democracy	15	
03	Concept of Nationalism	13	
04	Concept of Socialism	14	
05	Behaviouralism and Sovereignty	15	

PROGRAMS SCHEDULE (2021 - 22)

TROGRETIVE SCHEDCEE (2021 22)						
Sr. No.	Particulars	To be organized in				
01	Constitutional Day	26 November 2021				
02	Human Rights Day	10 December 2021				
03	Study Forum	18 December 2021				
04	National Essay Competition	11 January 2022				
05	Guest Lecturer	12 January 2022 Dr V K Gaikwad				
06	One day Interdisciplinary National Conference	28 Feb 2022 Topic-75 years of Indian Democracy				
07	Guest Lecturer	08 March 2022 Dr Shubhangi Rathi. Sub-Women				
07	Guest Eccturer	Law &Gender Equality				



SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA

DEPARTMENT OF HISTORY

DEPRTMENTAL ACADEMIC CALENDAR 2021–22

Departmental	Academic	Calendar	(2021-2)	2)
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Sr. No.	Activity	Commencemen	nt Cessation	Total Days		
01	First Session	30/08/2021	15/01/2022	105		
02	Admission Process	01/09/2021	18/09/2021	14		
03	Teaching Days (Odd Semesters)	27/09/2021	15/01/2021	83		
04	Induction Program for First Year Students	20/09/2021	25/09/2021	06		
05	First Term Vacation	01/11/2021	06/11/2021	06		
06	Odd Semesters University Exam	17/01/2022	05/02/2022	19		
07	Academic Session (Second Session)	17/01/2022	31/05/2022	109		
08	Teaching Days (Even Semesters)	07/02/2022	31/05/2022	90		
09	Second Term Vacation	01/06/2022	30/06/2022	26		
10	Even Semesters University Exam	01/06/2022	30/06/2022	30		
11	Commencement of next Academic session	01/07/2022				
Sr. No.	Public Holic	dov	Day & Day	to.		
01	Ganesh Chaturthi	aay	Day & Date Friday, 10 September, 2021			
02	Gauri Pujan		Monday, 13 September, 2021			
03	Mahatma Gandhi Jayanti		Saturday, 02 October, 2021			
04	Sarvpitri Amavasya		Wednesday, 06 October, 2021			
05	Dasara		Friday, 15 October, 2021			
06	Id E Milad		Saturday,02 October, 2021			
07	Gurunanak Jayanti		Friday, 19 November, 2021			
08	Christmas		Saturday,25 December, 202	21		
09	Mahashivratri		Friday, 14 January, 2022			
10	Republic Day		Wednesday, 26 January, 20			
11	Chhatrapati Shivaji Mahara	j Jayanti	Saturday, 19 February, 202	.2		
12	Mahashivratri		Tuesday,01 March,2022			
13	Holi (Second Day)		Friday, 18 March, 2022			
14	Gudhi Padwa		Saturday, 02 April,2022			
15	Dr. Babasaheb Ambedkar J	ayantı	Thursday, 14 April, 2022			
16	Ramzan Id (Id-Ui-Fitar)		Tuesday, 03 May, 2022			
17	Buddha Pournima		Monday, 16 May, 2022			

Time Table

Faculty: ARTS Subject: HISTORY

- we want just a same a sa						
	1	2	3	4	5	6
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to
Time	11:48	12:36	1:24	2:22	3:10	3:58
MON		B.A. II		B.A.I	B.A. III	
TUE		B.A. I		B.A. II	B.A. III	
WED	B.A. III				B.A.II	B.A. I
THUS	B.A. II	B.A. I				
FRI	B.A. I		B.A. III			
SAT	B.A. III	B.A. II				

Allotted Workload

Subject: HISTORY Year: 2021-22

Sr.	Class	No.	of periods per v	veek	Paper
No.	Class	Lectures	Tutorials	Practical	Paper Allotted
1	BAI(A)	05			
2	BA II	05			
3	BA III	05			

Total Workload per week (L+T+P): 15 (L) = 15 (12 Hrs)

Teaching Periods Available per month during the session 2021-22

Faculty :ARTS Subject : HISTORY

	ODD SEMESTER					EVEN SEMESTER							
Class	Periods		SEP T- 21	OC T- 21	NO V- 21	DE C- 21	JAN -22	Total	FEB- 21	MAR - 22	AP R- 22	MAY- 22	Total
BAI	Theory		04	19	16	23	10	72	16	21	19	20	76
BAI	Tutorial												
DA II	Theory		04	19	17	21	11	72	15	22	18	20	75
BA II	Tutorial												
BA III	Theory		03	19	16	21	11	80	15	20	20	20	75
DA III	Tutorial												

Te	aching Plan	n for Theory (First Semester) Class: B. A. Par 700 A.D.)	t - I (History of	India Earliest Time to
Sr. No	Unit	Topic to be covered	Lectures Available	Lectures Utilized
0.1		1) Survey of the Sources of Ancient India		
01	Unit -I	2) Harppan Civilization	15	
		3) Vedic Age		
02	TT :: TT	1) Rise of Religious Movement	10	
02	Unit -II	2) Rise of the Territorial State	10	
02	II:4 III	2) Mouryan and Post Mauryan Period	1.5	
03	Unit -III	(Shungas, Kushanas, Satvahana.)	15	
		1) Gupta Dynasty		
04	Unit -IV	2) Vakatak Dynasty	17	
		3) Vardhan Empire	1	
		1) Educational in Ancient India		
		2) Position of the Women in Ancient India	1	
05	Unit -V	3) Judicial Administration in Ancient India	15	
		4) Art and Architecture in Ancient India	 	
T	eaching Pla	n for Theory (Second Semester) Class : B. A. 1526 A.D)	Part - I (History	y of India from 701 to
Sr.		,	Lecture	
No	Unit	Topic to be covered	Available	Lecture Utilized
		1) Arab and Turks Invasion		
01	01 Unit -I	2) Establishment of Sultanat	15	
		3) Qutbuddin Aibak		
		1) Iltutamish		
		2) Razia		
02	Unit -II	3) Balban	17	
02	Omt-II	4) Allauddin Khilji's Political and Administrative Policy		
		5) Allauddin Khilji's Economical Policy		
		1)Mahammad Tughluq		
		2) Firoz Shah Tughluq		
03	Unit -III	3) Invasion of Taimur	15	
		4) The Saiyyids, the Lodis and the Decline of the		
		Sultanate		
		1)The Bahamanis Kingdom		
04	Unit -IV	2) The Vijaynagar Empire	15	
		3) Political Structure during Sultanate Period	1	
		1)State and Society		
		2) Social Status of Women		
05	Unit -V	3) Economical and Technological Development	14	
05	Cilit V	4) Arts and Education	†	
		5) Religious Movements	+	
	_	for Theory (Third Semester), Class: B. A. Pa	rt- II, (History o	of India From 1226 to
	6 A.D.		 	
Sr. No	Unit	Topic to be covered	Lectures Available	Lectures Utilized
•		1) Survey of the Sources of Medieval India		
		2) Establishment and Cansolidation of Mughal	- -	
01	Unit -I	Empire	17	
		3) Mughal Policy	 	
	1	c) 1.1ugilii 1 olioj		

	T			
		1) Mughal Ruling Classes		
02	Unit -II	2) Mughals Relation with India Power	15	
		3) Declined of Mughal Empire		
		1) Mughal Economy		
03	Unit -III	2) Mughal Society	10	
03	Omt-m	3) Religion	10	
		4) Cultural Life		
		1) Sources of Maratha History		
		2) Emergence of Maratha Power		
04	Unit -IV	3) Maratha Power Under Shivaji	20	
		4) Maratha Power Under Sambhaji	1	
		5) The Maratha War of Independence	1	
		1) Political Administration Under Maratha		
		2) Military System Under Maratha	1	
05	Unit - V	3) Judicial Administration Under Maratha	10	
		4) Fiscal Administration of Maratha	1	
		5) Religious Policy of Maratha	†	
Te	ı aching Plan	for Theory (Forth Semester) Class: B. A. Pa	art - II (History	v of India From 1757
10	acining i ian	to 1947 A.D.)	art ir (instor,	of maia from 1757
Sr.		(0 1)47 M.D.)		
No	Unit	Topic to be covered	Lectures	Lectures Utilized
	0		Available	200000000000000000000000000000000000000
		1) Advent of European Power		
01	Unit -I	2) Tool of Expansion of British Dominion in India	15	
		3) Economic Changes	7	
		1) Revolt of 1857		
02	Unit -II	2) Socio-religious Movement	17	
		3) Modern Education	† · · · · · · · · · · · · · · · · · · ·	
		1) Nationalism		
03	Unit -III	2) India National Congres (Early Phase)	15	
0.5		3) India National Congres (Leter Phase)	15	
		Early Gandhian Programme		
		2) Non Co-oparation Movement	┪	
04	Unit - IV	3) Civil Disobedience Movement	17	
		4) Quite India Movement	╡	
		Constitutional Development		
		Revolutionary Movement	╡	
05	Unit - V	3) Subhashchandra Bose and Azad Hind Army	11	
		4) India Towards Indipendence	+	
То	oching Plan	for Theory (Fifth Semester) Class: B. A. Part	III (History of	f Modorn World From
10	acining 1 ian	1780 to 1920 A.D.)	- III (IIIstory of	i word From
Sr.		TIOU IO IOMO INDI)		
No	Unit	Topic to be covered	Lectures	Lectures Utilized
		1	Available	
		1) French Revolution		
Ω1	IImit I	2) Emergence of Nepolian Bonaparte	15	
01	Unit - I			
		3) Congress of Vienna 1815 A.D.		
_		1) Making of the Nation	_	
02	Unit - II	2) Foreign policy of Germany Under Bismarck	20	
		3) Germany Under Kaiser William II		
02	II:	1) Triple Entente	15	
03	Unit - III	2) Russo-Japan War	-	
		3) First World War1) The Entry of USA In to First World War		
04	Unit - IV	•	-	
	1	2) Concept of Communism, Capitalism, Socialism		

		3) The Russian Revolution	15	
		1) Paris Peace Conference		
05	Unit - V	2) Versailles Treaty And Other	15	
		3) The League of Nation Aims, Objective, Structure		
Tea	aching Plan	for Theory (Sixth Semester) Class: B. A. Part 1921 to 1965 A.D.)	- III (History o	of Modern World From
Sr. No	Unit	Topic to be covered	Lectures Available	Lectures Utilized
		1)Rise of Fascism in Italy		
0.1	Unit - I	2)Rise of Nazism in Germany	15	
01	Omt - 1	3)Rise of Stalin in Russia	13	
		4)The Great Economic Depression 1929		
		1)Causes and Result of The Second World War		
02	Unit - II	2) Entry of the USA into the Second World War	15	
		3)Diplomatic Conferences during the War Period		
		1)United Nations Organization		
03	Unit - III	2)The Emergence of the USA as world Power	20	
		3)The Emergence of the USSR as World Power		
		1)Post War World		
0.4	11	2)The Doctrine, The Marshal Plan, Point Four	10	
04	Unit - IV	Programme. 3)Military Alliances – NATO, SEATO, CENTO,		
		Warsaw		
		1)The Suez Crisis		
05	Unit - V	2)European Unity and Disunity, European Common Market, Common Wealth of Nation, The Berlin Crisis, Quba Crisis.	15	

PROGRAMS SCHEDULE (2021 - 22)

	TROGRAMS SCHEBELE	(2021 22)
Sr.	Particulars	To be organized in
No.		
01	Study Circle Formation	NOVEMBER 2021
02	Guest Lecture	FEBRUARY 2022
03	Educational Tour	FEBRUARY 2022
07	Elocution	NOVEMBER 2021 & MARCH
		2022
08	Seminar	SEPTEMBER 2021 & MARCH
		2022
09	Group Discussion	OCTOBER 2021 & MARCH
	_	2022

H.O.D
(HISTORY)
Arts & Commerce College
Warvat Bakal, Dtst. Buldana

SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA

DEPARTMENT OF COMMERCE

DEPRTMENTAL ACADEMIC CALENDAR 2021-22

01 First Session 30/08/2021 15/01/2022 02 Admission Process 01/09/2021 18/09/2021 03 Teaching Days(Odd Semesters) 27/09/2021 15/01/2022 04 Induction Program for First Year Students 20/09/2021 25/09/2021 05 FirstTermVacation 01/11/2021 06/11/2021 06 Odd Semesters University Exam 17/01/2022 31/05/2022 07 Academic Session (Second Session) 17/01/2022 31/05/2022 08 Teaching Days (Even Semesters) 07/02/2022 31/05/2022 09 Second Term Vacation 01/06/2022 30/06/2022 10 Even Semesters University Exam 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 30/06/2022 12 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday, 02 October, 2021 04 Sarvpitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Mi	Sr. No.	Activity	Commencemen	t Cessation	TotalDays		
03 Teaching Days(Odd Semesters) 27/09/2021 15/01/2022 04 Induction Program for First Year Students 20/09/2021 25/09/2021 05 FirstTermVacation 01/11/2021 06/11/2021 06 Odd Semesters University Exam 17/01/2022 05/02/2022 07 Academic Session (Second Session) 17/01/2022 31/05/2022 08 Teaching Days (Even Semesters) 07/02/2022 31/05/2022 09 Second Term Semesters 01/06/2022 30/06/2022 10 Even Semesters University Exam 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 30/06/2022 Sr. No. Public Holiday Day & Date 01 Ganesh Chaturthi Friday, 10September, 2021 02 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday,02 October, 2021 04 Sarvpitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Milad Saturday,02 Oct	01	First Session	30/08/2021	15/01/2022	105		
03 Teaching Days(Odd Semesters) 27/09/2021 15/01/2022 04 Induction Program for First Year Students 20/09/2021 25/09/2021 05 FirstTerm Vacation 01/11/2021 06/11/2021 06 Odd Semesters University Exam 17/01/2022 05/02/2022 07 Academic Session (Second Session) 17/01/2022 31/05/2022 08 Teaching Days (Even Semesters) 07/02/2022 31/05/2022 09 Second Term Semesters 01/06/2022 30/06/2022 10 Even Semesters University Exam University Exam O1/07/2022 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 Day & Date Sr. No. Public Holiday Day & Date 01 Ganesh Chaturthi Friday, 10September, 2021 02 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday, 02 October, 2021 04 Sarypitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Milad <td>02</td> <td>Admission Process</td> <td>01/09/2021</td> <td>18/09/2021</td> <td>14</td>	02	Admission Process	01/09/2021	18/09/2021	14		
04 First Year Students 20/09/2021 25/09/2021 05 FirstTermVacation 01/11/2021 06/11/2021 06 Odd Semesters University Exam 17/01/2022 05/02/2022 07 Academic Session (Second Session) 17/01/2022 31/05/2022 08 Teaching Days (Even Semesters) 07/02/2022 31/05/2022 09 Second Term Semesters 01/06/2022 30/06/2022 10 Even Semesters University Exam 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 session Sr. No. Public Holiday Day & Date 01 Ganesh Chaturthi Friday, 10September, 2021 02 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday, 02 October, 2021 04 Sarvpitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Milad Saturday, 02 October, 2021 07 Gurunanak Jayanti Friday, 19November, 2021 0	03		27/09/2021	15/01/2022	83		
06 Odd Semesters University Exam 17/01/2022 05/02/2022 07 Academic Session (Second Session) 17/01/2022 31/05/2022 08 Teaching Days (Even Semesters) 07/02/2022 31/05/2022 09 Second Term Vacation 01/06/2022 30/06/2022 10 Even Semesters University Exam 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 Sr. No. Public Holiday Day & Date 01 Ganesh Chaturthi Friday, 10September, 2021 02 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday,02 October, 2021 04 Sarypitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Milad Saturday,02 October, 2021 07 Gurunanak Jayanti Friday, 19November, 2021 08 Christmas Saturday,25 December, 2021 09 Mahashivratri Friday, 14January, 2022 10 Republic Day Wednesday, 26 Januar	04		20/09/2021	25/09/2021	06		
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07 (Second Session) 17/01/2022 31/05/2022 08 Teaching Days (Even Semesters) 07/02/2022 31/05/2022 09 Second Term Vacation 01/06/2022 30/06/2022 10 Even Semesters University Exam 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 Day & Date Sr. No. Public Holiday Day & Date 01 Ganesh Chaturthi Friday, 10September, 2021 02 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday,02 October, 2021 04 Sarvpitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Milad Saturday,02 October, 2021 07 Gurunanak Jayanti Friday, 19November, 2021 08 Christmas Saturday,25 December, 2021 09 Mahashivratri Friday, 14January, 2022 10 Republic Day Wednesday, 26 January, 2022 11 Chhatrapati Shivaji Maharaj Jayanti Saturday, 19 F	06		17/01/2022	05/02/2022	19		
08 Semesters) 07/02/2022 \$17/03/2022 09 Second Term Vacation 01/06/2022 30/06/2022 10 Even Semesters University Exam 01/06/2022 30/06/2022 11 Commencement of next Academic session 01/07/2022 Day & Date Sr. No. Public Holiday Day & Date 01 Ganesh Chaturthi Friday, 10September, 2021 02 Gauri Poojan Monday, 13September, 2021 03 Mahatma Gandhi Jayanti Saturday,02 October, 2021 04 Sarvpitri Amavasya Wednesday, 06October, 2021 05 Dasara Friday, 15October, 2021 06 Id E Milad Saturday,02 October, 2021 07 Gurunanak Jayanti Friday, 19November, 2021 08 Christmas Saturday,25 December, 2021 09 Mahashivratri Friday, 14January, 2022 10 Republic Day Wednesday, 26 January, 2022 11 Chhatrapati Shivaji Maharaj Jayanti Saturday, 19 February, 2022 12 Mahashivratri Tuesday,01 March, 2022	07		17/01/2022	31/05/2022	109		
Vacation Even Semesters University Exam O1/06/2022 Ommencement of next Academic session Sr. No. Public Holiday Friday, 10September, 2021 O3 Mahatma Gandhi Jayanti Saturday,02 October, 2021 O4 Sarvpitri Amavasya Wednesday, 06October, 2021 O5 Dasara Friday, 15October, 2021 O6 Id E Milad Saturday,02 October, 2021 O7 Gurunanak Jayanti Friday, 19November, 2021 O8 Christmas Saturday,02 October, 2021 O7 Gurunank Jayanti Friday, 19November, 2021 O8 Christmas Saturday,02 October, 2021 O9 Mahashivratri Friday, 19November, 2021 O9 Mahashivratri Friday, 14January, 2022 10 Republic Day Wednesday, 26 January, 2022 11 Chhatrapati Shivaji Maharaj Jayanti Saturday, 19 February, 2022 12 Mahashivratri Tuesday,01 March,2022 13 Holi (Second Day) Friday, 18 March, 2022	08		07/02/2022	31/05/2022	90		
University Exam	09		01/06/2022	30/06/2022	26		
Sr. No. Public Holiday Day & Date	10		01/06/2022	30/06/2022	30		
01Ganesh ChaturthiFriday, 10September, 202102Gauri PoojanMonday, 13September, 202103Mahatma Gandhi JayantiSaturday,02 October, 202104Sarvpitri AmavasyaWednesday, 06October, 202105DasaraFriday, 15October, 202106Id E MiladSaturday,02 October, 202107Gurunanak JayantiFriday, 19November, 202108ChristmasSaturday,25 December, 202109MahashivratriFriday, 14January, 202210Republic DayWednesday, 26 January, 202211Chhatrapati Shivaji Maharaj JayantiSaturday, 19 February, 202212MahashivratriTuesday,01 March,202213Holi (Second Day)Friday, 18 March, 2022	11	next Academic	01/07/2022				
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12MahashivratriTuesday,01 March,202213Holi (Second Day)Friday, 18 March, 2022							
13 Holi (Second Day) Friday, 18 March, 2022			aj Jayanti)22		
14 GudhiPadwa Saturday, 02 April,2022		` 7/					
			T				
			Jayantı	Thursday, 14 April, 2022			
16Ramzan Id (Id-Ui-Fitar)Tuesday, 03 May, 202217Buddha PournimaMonday, 16 May, 2022				Tuesday, 03 May, 2022			

Time Table

Dr S W Rane

Faculty: Commerce	Subje	ect: BEC, IT	ΓA, STA,	CMA, I &	WWW

Period	1	2	3	4	5	6
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to
Time	11:48	12:36	1:24	2:22	3:10	3:58
MON	II	III	I		III	
TUE	II	III	I		III	
WED	II	III	I		III	
THUS	III	I	II		III	
FRI	III	I	II		II	
Period	1	2	3	4	5	6
Day /	07:30 to	08:18 to	09:06 to	10:04 to	10:52 to	11:40 to
Time	08:18	09:06	09:54	10:52	11:40	12:28
SAT		III	II			

Allotted Workload

Subject: COMMERCE Year: 2021-22

Sr.	Class	No.	Paper		
No.	Class	Lectures	Tutorials	Practical	Allotted
1	B.Com I	05			
2	B.Com II	07			
3	B.Com III	10			

Total Workload per week (L+T+P): 22 (L) + 00 (T) = 22 (17 hrs. 36 m)

Teaching Periods Available per month during the session 2021-22

Faculty: COMMERCE Subject: BEC, ITA, BMS, CMA, I&WWW

racuity. COMMERCE				Subject . DEC, ITA, DWIS, CWIA, 1& W W								
		ODD SEMESTER					EVEN SEMESTER					
Class	Periods	SEP T-21	OC T- 21	NOV -21	DEC- 21	JAN- 22	Total	FEB- 22	MAR- 22	APR-22	MAY - 22	Total
B.Com I	Theory	04	19	16	23	10	72	20	21	19	20	80
(PEC, BEC)							00					00
B.Com II (ITA, STA)	TH. (ITA)	04	19	16	23	10	72	20	21	19	20	80
	TH. (BMS)	00	08	05	08	05	26	07	07	08	08	30
B.Com III (CMA, I&WWW	TH. (CMA)	04	19	16	23	10	72	20	21	19	20	80
	TH. (I&WW W)	04	19	17	21	11	72	19	22	19	20	80

Sr. No. Topic to be covered	Class : B com Part I (PEC)	
		Lectures Utilized
01 INTRODUCTION	15	
02 UTILITY APPROACH	15	
03 ELASTICITY OF DEMAND	14	
04 PRODUCTION FUNCTION	14	
05 COST AND REVENUE	14	
Teaching Plan for Tutorial (Second Semeste		
Sr. No. Topic to be covered		Lectures Utilized
01 BUSINESS AND MANEGERIAL	16	
ECONOMICS 02 MARKET STRUCTURE	16	
03 MARKET STRUCTURE	17	
04 FACTORS PRICING	16	
05 FACTORS PRICING	15	
Teaching Plan for Theory (Third Semester)		
Sr. No. Topic to be covered		Lectures Utilized
01 MEANING OF AUDITING	14	Lectures Offized
	14	
03 COMPANY AUDITOR	15	
04 AUDIT OF DIVISIBLE PROFIT	15	
05 AUDIT OF BANKING	14	
Teaching Plan for Theory (Fourth Semester		
Sr. No. Topic to be covered		Lectures Utilized
01 BASIC CONCEPT-INCOME TAX		
02 COMPUTATION OF INCOME FR SALARY	16	
03 INCOME FROM OTHER SOURCE	ES 17	
04 INCOME TAX AUTHORITIES	16	
05 RETURN OF INCOME	16	
Teaching Plan for Theory (Third Semester)	Class: B com Part II (BMS)	
Sr. No. Topic to be covered	<u> </u>	Lectures Utilized
01 MATHEMATICS OF FINANCE	13	
02 RATIO AND PROPORTION	13	
Teaching Plan for Theory (Fourth Semester	Class: B COM Part II (BST)	
Sr. No. Topic to be covered		Lectures Utilized
01 CONCEPT OF DISPERSION	15	accounts connacc
02 CO-EFFICIENT OF DISPERSION		
Teaching Plan for Theory (Fifth Semester)	Class : B com Part III (CAC)	
Sr. No. Topic to be covered	` /	Lectures Utilized
01 COST ACCOUNTING	16	Lectures Offitzed
02 MATERIAL COST	16	
03 LABOUR COST	14	
04 OVERHEADS	14	
05 PROCESS COSTING	12	
Teaching Plan for Theory (Sixth Semester)	Class: B com Part III (MAC)	
Sr. No. Topic to be covered		Lectures Utilized
01 MANAGEMENT ACCOUNTING		Lectures Offized
02 BREAK-EVEN-ANALYSIS	17	
	16	
	16	
	16	
05 BUDGETARY CONTROL	Class: B COM Part III (I&WW-I)	
05 BUDGETARY CONTROL Teaching Plan for Theory (Fifth Semester)		T , TT.141 4
05 BUDGETARY CONTROL Teaching Plan for Theory (Fifth Semester) Sr. No. Topic to be covered	Lectures Available	Lectures Utilized
05 BUDGETARY CONTROL Teaching Plan for Theory (Fifth Semester) Sr. No. Topic to be covered 01 NETWORK	Lectures Available 15	Lectures Utilized
05 BUDGETARY CONTROL Teaching Plan for Theory (Fifth Semester) Sr. No. Topic to be covered 01 NETWORK 02 INTERNET	Lectures Available 15 16	Lectures Utilized
05 BUDGETARY CONTROL Teaching Plan for Theory (Fifth Semester) Sr. No. Topic to be covered 01 NETWORK 02 INTERNET 03 ELECTRONIC MAIL	Lectures Available 15 16 15	Lectures Utilized
05 BUDGETARY CONTROL Teaching Plan for Theory (Fifth Semester) Sr. No. Topic to be covered 01 NETWORK 02 INTERNET	Lectures Available	Lectures Utilized

Teaching	Teaching Plan for Theory (Sixth Semester) Class: B com Part III (I&WW-II)								
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized						
01	WEB BROWSING	16							
02	WEB DIRECTORY	16							
03	SOCIAL NETWORKING	17							
04	GOOGLE DRIVE	15							
05	M.S. FRONT PAGE EXPRESS	16							

PROGRAMS SCHEDULE (2021 - 22)

Sr. No.	Particulars	Date
01	Teacher Day celebrates	05/09/2021
02	Online Welcome Program of First Year Students	04/10/2021
03	Online Bridge Course For First Year Students	05/10/2021 — 12/10/2021
04	Online Quiz Competition On Mahatama Gandhi Jayanti	07/10/2021
05	Study Circle Formation	10/12/2021
06	Debate	05/01/2022
07	Group Discussion	09/03/2022
08	World Consumer Day	15/03/2022
09	Seminar	20/04/2022
10	Guest Lecture	07/05/2022

Time Table Dr. S J Tale

Faculty : Commerce Subject : B.COM Part I PBM, PBO, CFS-I/II,

B.COM Part II COA, CAT,

B.Com Part III BRFC, CLAW, EOE-I/II

Period	1	2	3	4	5	6
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to
Time	11:48	12:36	1:24	2:22	3:10	3:58
MON		B.Com II	B.Com III	B.Com I	B.Com I	
TUE		B.Com I	B.Com III	B.Com III	B.Com II	
WED		B.Com II	B.Com III	B.Com III	B.Com I	
THUS		B.Com II	B.Com I	B.Com III	B.Com I	
FRI	B.Com I	B.Com II	B.Com III	B.Com III		
Period	1	2	3	4	5	6
Day /	07:30 to	08:18 to	09:06 to	10:04 to	10:52 to	11:40 to
Time	08:18	09:06	09:54	10:52	11:40	12:28
SAT	B.Com III	B.Com I		B.Com III		

Allotted Workload

Subject : COMMERCE Year : 2021-22

Sr.	Class	No.	Paper		
Sr. No.	Class	Lectures	Tutorials	Practical	Allotted
1	B.Com I	08			
2	B.Com II	05			
3	B.Com III	10			

Total Workload per week (L+T+P): 23 (L) + 00 (T) = 23 (18 hrs. 24 m)

Teaching Periods Available per month during the session 2021-22

ODD SEMESTER						EVEN SEMESTER						
Class	Period s	SEP T-21	OC T- 21	NOV -21	DEC -21	JAN- 22	Total	FEB- 22	MA R-22	APR- 22	MA Y - 22	Total
B.Com I SEM I	PBO (T)	04	19	16	23	10	72	20	21	19	20	80
(PBO, CFS-I)	CFS-I (T/P)	04	19	16	23	10	72	20	21	19	20	80
B.Com II SEM III (COA)	COA (T)	04	19	16	23	10	72	20	21	19	20	80
B.Com III	BRFC (T)	04	19	16	23	10	72	20	21	19	20	80
SEM V (BRFC/ EOE-I)	CO (T)	04	19	17	21	11	72	19	22	19	20	80

Teaching	Plan for Theory (First Semester) Class : B com Part I (PB	0)	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Commerce and Industry	15	Ecctures Ctilized
02	Business	15	
03	Merger and Acquisition	14	
03		14	
	New Enterprises	+	
05	Trade in India Plan for Tytorial (First Serrester) Class - Plant I (Cl	14 TC TO	
	Plan for Tutorial (First Semester) Class : B com Part I (Cl		T . TT.'1' 1
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Fundamentals of Computer	15	
02	Computer Organization	15	
03	Memory organization of Computer	14	
04	Input/Output Devices of Computer System	14	
05	Word Processing Working with Text IMS-WORD 2007]	14	
Teaching	Plan for Theory (Second Semester) Class: B com Part I (P	BM)	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Management Concept	17	
02	Planning	16	
03	Organizing	16	
04	Directing	16	
	<u> </u>		
05	Controlling	15	
	Plan for Tutorial (Second Semester) Class : B com Part I (T
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Operating System	17	
02	Operating System [Advance]	16	
03	Modern communications {Concepts only}:	16	
04	Word Processing working with Table and t3raphics:	16	
	IMS-WORD 20071		
05	PowerPoint Presentation	15	
Teaching	Plan for Theory (Third Semester) Class: B com Part II (C	COA)	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Issue, Forfeiture and Re-issue of Shares.	14	
02	Final Accounts of Company	14	
03	Profit Prior to Incorporations.	15	
04	Amalgamation of Company	15	
05	Absorption of Company	14	
	Plan for Theory (Fourth Semester) Class: B CO		l.
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Final Accounts of Banking Company	15	Ecctures etimzed
02	Final Accounts of Fire and Accident Insurance Company	16	
03	Liquidation of Company	17	
-	Valuation of Goodwill		
04		16	
05	Valuation of Shares	16	(C)
		: B com Part III(BRF	1
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Indian Contract Act 1872	15	
02	Special Contacts	15	
03	Sales of Goods Act, 1930 and Consumer Protection	14	
	Act, 1986		
04	Negotiable Instrument Aet, 1881	14	
05	Goods and Sewices Tax Act, 2017	14	
		Part III (EOE-I)	1
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Basics of E-Commerce	15	
02	E-Commerce in India	15	
03	Retail E-Commerce	14	
04	B28 E-Commerce	14	
05	E- Payment and E-Banking	14	
		Part III (CLAW)	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized

01	Introduction; Definition, Silent Features of Company, Act 2013	16	
02	Incorporation of Company	16	
03	Share Capital of Company	16	
04	Securities Market	16	
05	Company Secretary and Company Meetings	16	
Teaching	Plan for Theory (Sixth Semester) Class: B COM Part 1	III (EOE-II)	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Internet E-Commerce Business Models	16	
02	B2C Internet Marketing	16	
03	B28 Online Marketing	16	
04	E-Governance	16	
05	E- Governance Models	16	

Time Table Mr S R Bhaltadak

Faculty: COMMERCE Subject: FAC, IFS, ITB, BST, EOD

Period	1	2	3	4	5	6
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to
Time	11:48	12:36	1:24	2:22	3:10	3:58
MON	III (EOD)	I (FAC)		II (IFS)		II (ITB)
TUE	III (EOD)	II(IFS)	II (ITB)	I (FAC)		II (BST)
WED	III (EOD)	I (FAC)	II (BST)	II (ITB)		
THUS	II (ITB)	III (EOD)		II (IFS)	II (BST)	
FRI		III (EOD)	I (FAC)	II (IFS)		
SAT	I (FAC)	II (IFS)		II (ITB)		

Allotted Workload

Subject: FAC,IFS,ITB,BST,EOD Year: 2021-22

Sr.	Class	No.	Paper		
No.	Class	Lectures	Tutorials	Practical	Allotted
1	B.COM.I (FAC)	05			
2	B.COM.II (IFS)	05			
3	B.COM. II (ITB)	05			
4	B.COM.II (BST)	03			
5	B.COM.III (EOD)	05			

Total Workload per week (L+T+P): 23 (L) + 00 (T) + 00(P) = 23 (18.24 Hrs)

Teaching Periods Available per month during the session 2021-22 Bhaltadak Faculty: COMMERCE Subject: FAC,IFS,ITB,BST,EOD

Mr. S. R. Bhaltadak

		ODD SEMESTER					EVEN SEMESTER					
Class	Periods	SEPT- 21	OC T-21	NO V- 21	DE C- 21	JAN- 22	Total	FEB- 22	MAR- 22	APR- 22	MAY - 22	Total
B.Com I (FAC)	Theory	03	20	16	21	11	71	15	20	20	20	75
B.Com	TH. (IFS)	03	22	16	21	11	73	14	20	19	20	73
II (IFS, ITB,	TH. (ITB)	04	19	17	21	11	72	16	22	19	20	77
BST)	TH. (BMS)	03	11	10	12	06	42	09	14	11	12	46
B.Com III (EOD)	TH. (EOD)	04	19	16	23	10	72	16	21	18	20	76

Teaching	Plan for Theory (First Sem.) Class: B.Com. Part I	Sub-Advanced	Accountancy
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	INTRODUCTION OF BOOK KEEPING & ACCOUNTANCY	12	
02	ACCOUNTING TRANSACTIONS & RECTIFICATION OF ERRORS, SUB-SIDIARY BOOK	16	
03	FINAL ACCOUNTS OF INDIVIDUALS	14	
04	DEPRICIATION METHODS	15	
05	RECONCILLIATION STATEMENTS	14	
	TOTAL	71	
Teaching	Plan for Theory (Second Sem.) Class: B.Com. Part I	Sub- Financial A	ccounting
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	ACCOUNTS OF NON-TRADING INSTITUTIONS	14	
02	ACCOUNTS OF CO-OPERATIVE SOCIETIES	14	
03	ACCOUNTS FOR AGRICULTURE FARMS	14	
04	HIRE PURCHASE & INSTALMENTS PURCHASE ACCOUNTS	16	
05	INSOLAVANCY ACCOUNTS OF INDIVIDUALS	17	
	TOTAL	75	
Teaching	Plan for Theory (Third Sem.) Class: B.Com. Part II	Sub- Monetar	y System
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	MONEY	14	
02	VALUE OF MONEY	14	
03	PRICE FLUCTUATIONS	15	
04	MONEY MARKET	15	
05	CAPITAL MARKET	15	
	TOTAL	73	
Teaching	Plan for Theory (Fourth Sem.) Class: B.Com. Part II	Sub-Indian Finan	cial System
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	INDIAN FINANCIAL MARKET	15	
02	INDIAN BANKS	14	_
03	COMMERCIAL BANKS	15	
04	RESERVE BANK OF INDIA	15	
05	STOCK EXCHANGE	14	
	TOTAL	73	
	Plan for Theory (Third Sem.) Class: B.Com. Part II Sub-I Data Processing-I	nformation Technpl	ogy & .
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized

0.1	DATA 0 DATA DDOCEGGNIC	11	
01	DATA & DATA PROCESSING	11	
02	DATABASE DATABASE MANAGEMENT SYSTEM	10	
03	DATABASE MANAGEMENT SYSTEM	10 17	
04	SPREADSHEET PACKAGE		
05	FORMULAS, FUNCTIONS AND CHART IN EXCELS	24 72	
T 1	TOTAL Diversity County County County D. Count		-10
	Plan for Theory (Fourth Sem.) Class: B.Com. Part II Sub-Data Processing-II	information Techn	ology &
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	INFORMATION TECHNOLOGY	06	
02	COMPUTERISED ACCOUNTING PACKAGE	06	
03	ACCOUNTING SOFTWARE	07	
04	WORKING IN TALLY	12	
05	REPORTS & ADVANCED FEATURES IN TALLY	46	
	TOTAL	77	
Teaching	Plan for Theory (Third Sem.) Class: B.Com. Part II	Sub- Business Ma	thematics
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	NATURAL NUMBERS,INTEGERS	06	
02	H.C.F. & L.C.M.	14	
03	PERCENTAGE-DISCOUNT ,COMMISSION & BROKERAGE	11	
04	AVERAGE, PROFIT & LOSS	11	
	TOTAL	42	
Teaching	Plan for Theory (Fourth Sem.) Class: B.Com. Part II	Sub - Bus	siness Statistics
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	INTRODUCTION OF STATISTICS	11	
02	INDEX NUMBERS	14	
03	ANALYSYS OF UNIVERSAL DATA	21	
	TOTAL	46	
Teaching	Plan for Theory (Fifth Sem.) Class: B.Com. Part	III Sub- Busine	ess Environment
Sr. No.	Topic to be covered	Lectures	Lectures Utilized
	•	Available	Lectures ethized
Δ1			
01	INDIAN BUSINESS ENVIRONMENT	14	
02	INDIAN AGRICULTURAL ENVIRONMENT	14	
02 03	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT	14 15	
02 03 04	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT	14 15 15	
02 03	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT	14 15 15 15	
02 03 04 05	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL	14 15 15 15 72	Davidores and
02 03 04 05	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT	14 15 15 15 72 Sub- Economics Of	Development
02 03 04 05 Teaching Sr. No.	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL Plan for Theory (Sixth Sem.) Class: B.Com. Part III (Sixth Sem.)	14 15 15 15 72 Sub- Economics Of Lectures Available	Development Lectures Utilized
02 03 04 05 Teaching Sr. No.	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL Plan for Theory (Sixth Sem.) Class: B.Com. Part III Topic to be covered ECONOMIC DEVELOPMENT	14 15 15 15 72 Sub- Economics Of Lectures Available 15	
02 03 04 05 Teaching Sr. No. 01	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL Plan for Theory (Sixth Sem.) Class: B.Com. Part III Topic to be covered ECONOMIC DEVELOPMENT ECONOMIC GROWTH MODELS	14 15 15 15 72 Sub- Economics Of Lectures Available 15 15	
02 03 04 05 Teaching Sr. No. 01 02	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL Plan for Theory (Sixth Sem.) Class: B.Com. Part III Topic to be covered ECONOMIC DEVELOPMENT ECONOMIC GROWTH MODELS ECONOMIC GROWTH MODELS	14 15 15 15 72 Sub- Economics Of Lectures Available 15 15	
02 03 04 05 Teaching Sr. No. 01 02 03	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL Plan for Theory (Sixth Sem.) Class: B.Com. Part III Seconomic Development ECONOMIC DEVELOPMENT ECONOMIC GROWTH MODELS ECONOMIC GROWTH MODELS GROWTH- BALANCED & UNBALANCED	14 15 15 15 72 Sub- Economics Of Lectures Available 15 15 16 15	
02 03 04 05 Teaching Sr. No. 01 02 03	INDIAN AGRICULTURAL ENVIRONMENT INDIAN INDUSTRIAL ENVIRONMENT INDIAN SERVICE ENVIRONMENT INDIA & FOREIGN TRADE ENVIRONMENT TOTAL Plan for Theory (Sixth Sem.) Class: B.Com. Part III Topic to be covered ECONOMIC DEVELOPMENT ECONOMIC GROWTH MODELS ECONOMIC GROWTH MODELS	14 15 15 15 72 Sub- Economics Of Lectures Available 15 15	



SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA

DEPARTMENT OF CHEMISTRY

DEPRTMENTAL ACADEMIC CALENDAR 2021–22

Department of Chemistry

ACADEMIC CALENDER 2021-2022

- 1. Session- I: From Monday, 5th July, 2021 to Saturday, 15th January, 2022
- 2. Diwali Vacation: From Monday, 1st November to Saturday, 6th November 2021
- 3. Session- II: From Monday, 17th January, 2022 to Tuesday, 31st May 2022
- 4. Summer Vacation: From Wednesday, 1st June, 2022 to Thursday, 30th June, 2022

Days available during Academic Year 2021-2022

Sr. No.	Activity	Commencement	Cessation	Total Days
1	First Session %	Monday, 30 August, 2021	Saturday, 15th January, 2022	105
2	Teaching Days (First Session)	Monday, 27 th September, 2021	Saturday, 15th January, 2022	83
3.	First Term Vacation	Monday, 1st November 2021	Saturday, 6th November 2021	06
4.	Non-instructional days	Monday, 5th July, 2021	Saturday, 24th July, 2021	18
5.	Second Session	Monday, 17th January, 2022	Tuesday, 31st May 2022	109
6.	Teaching Days (Second Session)	Monday, 7th February 2022	Tuesday, 31st May 2022	90
7.	Preparation for Summer Examination/ Non Instructional Days	Wednesday, 1st June, 2022	Thursday, 30th June, 2022	
8.	Second Term Vacation	Wednesday, 1st June, 2022	Thursday, 30th June, 2022	26

Vide the SGB Amravati University Gazette, following Public Holidays are declared for 2021 - 2022

Sr. No.	Public Holiday	Day & Date
1.	Ganesh Chaturthi	Friday, 10th September, 2021
2.	Gauri Poojan	Monday, 13th September, 2021
3.	Mahatma Gandhi Jayanti	Saturday, 2nd October, 2021
4.	Sarvapitri Amawasyya	Wednesday, 6th October, 2021
5.	Dasara	Friday, 15th October, 2021
6.	Id-E-Milad	Tuesday, 19th October, 2021
7.	Guru Nanak Jayanti	Friday, 19th November, 2021
8.	Christmas	Saturday, 25th December, 2021
9.	Makar Sankranti	Friday, 14th January, 2022
10.	Republic Day	Wednesday, 26th January, 2022
11.	Chhatrapati Shivaji Maharaj Jayanti	Saturday, 19th February, 2022
12.	Mahashivratri	Tuesday, 1st March, 2022
13.	Holi (Second Day)	Friday, 18th March, 2022
14.	Gudhi Padwa	Saturday, 2nd April, 2022
15.	Dr. Babasaheb Ambedkar Jayanti / Mahavir Jayanti	Thursday, 14th April, 2022
16.	Good Friday	Friday, 15th April, 2022
17.	Ramzan Id (Id-Ul-Fitar)	Tuesday, 3rd May, 2022
18.	Buddha Poornima	Monday, 16th May, 2022

PROGRAMS SCHEDULE (2021-2022)

Sr.	Particulars	Date
No.		
01	Chemistry Study Circle Inauguration	29/11/2021
02	Fire Extinguisher Uses and Handling	29/12/2021
03	Seminar Competition	04/01/2022
04	National Science Day	28/02/2022
06	Guest Lecture	03/03/2022

Time Table

Mr. Nityanand Devidas Dahake

Faculty: Science Subject: Chemistry

Period	1	2	3	4	5	6	7	8	9
	8:00	8:48	9.36				2:30	3:18	
Day /	to	to	to	11:00		12:36	to	to 4:6	3: to
Time	8:48	9:36	10:24	to	11:48 to	to	3:18		4:54
	(P)	(P)	(P)	11:48	12:36	1:24	(P)	(P)	(P)
MON	P	P	P		T				
TUE	P	P	P			T			
WED	P	P	P			T	P	P	P
THUS	P	P	P		Т		P	P	P
FRI	P	P	P				P	P	P
Day /				07:30	08:18To	09:16	10.0	4 to 12.2	8
Time				To	09:06	To		To	
1 iiile				08.18		10.04	12	.28 to 2.5	52
SAT					Т		P	P	P

Allotted Workload

Subject: Chemistry Year: 2021-2022

Sr. No.	Class	No.	Paper		
Sr. No.	Class	Lectures	Tutorials	Practical	Allotted
1	B.Sc1	02		4 * 3 = 12	
2	B.Sc2	02		2 * 3 = 06	
3	B.Sc3	01		4 * 3 = 12	

Total Workload per week (L+P): 05 (L) + 30 (P) = 35 (L) (28 hrs.)

Teaching Periods Available per month during the session 2021-2022
Faculty: Science Subject: Che **Subject: Chemistry**

			Odd semester					Even semester				
		Sep	Oct	Nov	Dec	Jan	Total	Feb	Mar	Apr	May	Total
	Theory	10	08	07	10	07	42	08	10	07	08	33
BSc1	Practical	84	96	72	96	108	456	84	84	96	96	360
DCo 2	Theory	08	07	10	08	09	42	08	08	08	08	32
BSc2	Practical	48	42	60	48	54	252	48	48	48	48	192
BSc3	Theory	04	04	04	03	05	20	03	04	04	04	15
BSC3	Practical	120	96	84	120	84	504	96	120	84	96	396

Teaching Plan for Theory (First Semester)	Class: BSc Part-I		
Sr. No. Topic to be covered	Lectures Available	Lectures Utilized	
Unit-4 Aromatic Hydrocarbons	1		
A] Nomenclature and Isomerism of Aromatic Compounds. Structure of Benzene: Kekule structure and Molecular orbital structure. B] Aromaticity and Huckel's rule Aromatic, antiaromatic and nonaromatic systems. C] Mechanism of Electrophilic Aromatic Substitution: Nitration, Friedel Craft Alkylation and Acylation. Nuclear and Side Chain Halogenation, Birch Reduction. D] Orientation: Effect of substituent groups. Activating and deactivating groups. Theory of reactivity and orientation on the basis of inductive and resonance effects (-CH3, -OH, -NO2 and -Cl groups).	21		
Unit-5 Thermodynamics			
Adiabatic and Isothermal processes. Work done in adiabatic and isothermal processes, Evaluation of different expressions showing relationship between pressure, volume and temperature. First law of Thermodynamics and its limitations, Need of Second law. Carnot's heat engine, derivation of expression for the work done and efficiency of Carnot's engine. Statements of Second law of thermodynamics. Concept of Entropy, Physical significance of Entropy, Derivation of expression for the Entropy change for an ideal gas in terms of pressure, temperature and volume. Entropy changes for an ideal gas for isothermal, isoberic and isochoric processes, Entropy of fusion, sublimation, vapourization, transition and its calculations. Entropy changes for reversible and irreversible processes. Entropy changes as a criterion for spontaneity. Numerical.	21		
Teaching Plan for Practical (First Semester)	Class: BSc Pa	rt-I	

Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Exercise 1: Inorganic Qualitative analysis Semimicro qualitative analysis of inorganic salt mixture containing two acidic		
	radicals and two basic radicals of same or different groups. At least six mixtures		
	to be given. Analysis of basic radicals to be done by using spot test reagents.		
	Following radicals to be given carbonate, nitrite, sulphite, sulphide, chloride,		
	bromide, iodide, nitrate and sulphate, silver(I), lead (II), copper(II), bismuth(III),		
	cadmium(II), tin(II), arsenic(III), antimony(III), iron(III), chromium(III),		
	aluminium (III), nickel(II), cobalt(II), manganese(II), zinc(II), calcium(II),		
	strontium(II), barium(II), magnesium(II).		
	Exercise II: Organic Preparations		
	1. Preparation of acetanilide (Acetylation).	456	
	2. Preparation of Benzanilide (Benzoylation).	456	
	3. Preparation of m-di-Nitrobenzene (Nitration).		
	4. Preparation of tri-Bromoaniline from Aniline (Bromination).		
	5. Preparation of Benzoic acid from Benzamide (Hydrolysis).		
	6. Preparation of Benzoic acid from benzaldehyde (Oxidation).		
	7. Preparation of phenylazo $-\beta$ – naphthol dye (Diazotisation).		
	8. Preparation of sulphanilic acid from aniline (Sulphonation).		
	Organic Preparations Using Green Chemistry Concept		
	9. Acetylation of primary amine (Preparation of acetanilide).		
	10. Base catalysed Aldol Condensation (Synthesis of dibanzal		
	propanone).		
Teaching	Plan for Theory (Third Semester)	Class: BSc P	art-2
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
Unit-4 Sto	ereochemistry		
	A] Optical isomerism: Element of symmetry, chirality,		
	asymmetric carbon atom, enantiomers, diastereoisomers,		
	relative and absolute configurations, DL and RS		
	nomenclature, racemization and resolution (by chemical		
	method). B] Geometrical isomerism: Cis-trans & E-Z	21	
	nomenclature, Methods of structure determination. C]	21	
	Conformational isomerism: Bayer's Strain theory and its		
	limitations. Stability of cycloalkanes, conformational isomers		
	of ethane, n-butane and cyclohexane, their energy level		
	diagrams. Newman & Sawhorse projection formulae.		
Unit-5 Th	ermodynamics and Equilibrium		
	(i) Gibbs and Helmholtz's free energy function. Physical significance of Gibb's		
	free energy, Change in free energy as a criterion of spontaneity and equilibrium.		
	Variation of free energy G with P & T. Gibb's-Helmholtz's equation in terms		
	of G and its application. (ii) Partial molal function, chemical potential,	2.1	
	derivations of Gibb's-Duhem equation. Chemical potential of an ideal gas in	21	
	gaseous mixture. Derivation of vant Hoff's isotherm and its application to		
	equilibrium state. Derivation of vant Hoff's equation and its applications. (iii)		
	Numerical.		
Teaching		s: BSc Part-2	
8	Exercise I:		
	a) Volumetric Analysis		
	(Standard solutions to be prepared by students only)		
	16 Laboratory sessions		
	1) Prepare 0.1N oxalic acid standard solution and find out the		
	acid		
	neutralizing capacity of an antacid using NaOH as an	252	
	intermediate solution.	252	
	2) Prepare 0.1N H2SO4 solution and find out its exact		
	normality using NaOH as an intermediate solution and 0.1N		
	oxalic acid as standard solution.		
	3) To determine the strength of oxalic acid by titration with		
	KMnO4.		
	4) To determine percentage purity of Ferrous Ammonium		
L	,		

	,		
	Sulphate (FAS) by titration with KMnO4.		
	5) To determine strength of FAS by titration with K2Cr2O7		
	using internal indicator.		
	6) To determine strength of K2Cr2O7 by titration with FAS		
	using internal indicator.		
	7) Estimation of copper (II) in commercial copper sulphate		
	sample by		
	iodometric titration		
	b) Gravimetric Analysis		
	Estimation of Ba2+ as BaSO 4, Fe3+ as Fe2O3 using china		
	and silica crucible and Ni2+ as Ni-DMG using sintered glass		
	crucible.		
	Exercise II: Physical Chemistry		
	refractive index by Abbe's refractometer.		
	2) To construct phase diagram of phenol-water system and to		
	determine consolute temperature for the system.		
	3) To determine transition temperature of MnCl2.4H2O.		
	4) To study kinetics of hydrolysis of methyl acetate catalyzed		
	by acid.		
	5) To study kinetics of saponification of ethyl acetate by		
	NaOH. (Equal concentration)		
	6) To determine partition coefficient of benzoic acid between		
	benzene and water.		
	7) To determine partition coefficient of iodine between		
	CCl4/Kerosene and water.		
	8) To determine solubility of benzoic acid at different		
	temperature and heat of solution.		
Teaching	Plan for Theory (Fifth Semester)	Class: BSc Pa	rt-3
		Lectures	Lectures
Sr. No.	Topic to be covered	Available	Utilized
Unit_3 He	eterocyclic Compounds	11 vanabie	Cunzea
Cint 5 IIC			I
	LΔ) Heterocyclic compounds Nomenclature Pyrrole Synthesis from L		
	A) Heterocyclic compounds: Nomenclature, Pyrrole: Synthesis from		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) – nitration, Sulphonation, acetylation and		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) – nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) – nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity,		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) – nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) – nitration,		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with		
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH.	20	
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium	20	
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic	20	
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes,	20	
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes, alkenes, higher alkynes and other organometallic compounds,	20	
	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes, alkenes, higher alkynes and other organometallic compounds, Nucleophilic substitution reactions- Reaction with aldehydes and	20	
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Ŭ	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes, alkenes, higher alkynes and other organometallic compounds, Nucleophilic substitution reactions- Reaction with aldehydes and ketones, ethylene oxide, acetyl chloride, methyl cyanide and CO2.Methyl lithium-Synthesis and reaction with water, formaldehyde, acetaldehyde, acetone, ethylene oxide and CO2. Plan for Practical (Fifth Semester)		art-3
Teaching Sr. No.	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes, alkenes, higher alkynes and other organometallic compounds, Nucleophilic substitution reactions- Reaction with aldehydes and ketones, ethylene oxide, acetyl chloride, methyl cyanide and CO2.Methyl lithium-Synthesis and reaction with water, formaldehyde, acetaldehyde, acetone, ethylene oxide and CO2.	Class: BSc P	
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Ŭ	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes, alkenes, higher alkynes and other organometallic compounds, Nucleophilic substitution reactions- Reaction with aldehydes and ketones, ethylene oxide, acetyl chloride, methyl cyanide and CO2.Methyl lithium-Synthesis and reaction with water, formaldehyde, acetaldehyde, acetone, ethylene oxide and CO2. Plan for Practical (Fifth Semester) Topic to be covered Exercise 1: Inorganic Preparations	Class: BSc P Lectures	Lectures
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Ŭ	acetylene, succinimide and furan, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, acetylation and halogenation, Molecular orbital structure. Pyridine: Synthesis from acetylene and Penta methylene diamine hydrochloride, Basicity, Electrophilic substitution reactions (orientation) — nitration, Sulphonation, Nucleophilic substitution reactions (orientation)— with NaNH2, C6H5Li and KOH. B] Organometallic compounds: Grignard reagents: Methyl magnesium bromide- Synthesis from methyl bromide (only reaction) Synthetic applications: Electrophilic substitution reactions-formation of alkanes, alkenes, higher alkynes and other organometallic compounds, Nucleophilic substitution reactions- Reaction with aldehydes and ketones, ethylene oxide, acetyl chloride, methyl cyanide and CO2.Methyl lithium-Synthesis and reaction with water, formaldehyde, acetaldehyde, acetone, ethylene oxide and CO2. Plan for Practical (Fifth Semester) Topic to be covered Exercise 1: Inorganic Preparations 1. Preparation of tetraamminecopper (II)sulphate. 2. Preparation of potassiumtrioxalate aluminate (III). 4. Preparation of Prussian blue. 5. Preparation of sodium thiosulphate and dithionite. (Comment on VB structure, magnetic properties and color of 1, 2 and 3 complexes) Exercise II: Physical Chemistry experiments	Class: BSc P Lectures Available	Lectures

	conductometrically.		
	3.To determine strength of given HCl solution potentiometrically.		
	4. To determine strength of HCl and CH3COOH in a given mixture		
	conductometrically.		
	5.To determine redox potential of Fe+2/Fe+3 system potentiometrically.		
	6. To determine molecular weight by Rast's method.		
	7.To determine specific rotation of optically active compound by		
	Polarimeter.		
Teaching	Plan for Theory (Second Semester) Class: BS		T + .
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
Unit 3 All	kyl and Aryl Halides		
	A] Alkyl Halides: Synthesis of vinyl chloride from acetylene and allyl		
	chloride from propylene, Reactions of both with aqueous and alcoholic		
	KOH, Comparison of reactivity of vinyl an allyl chloride.		
	B] Aryl Halides: Synthesis chlorobenzene from benzene, phenol and		
	benzene diazonium chloride, Synthesis of benzyl chloride from toluene		
	and benzyl alcohol, Reactions of both with aqueous KOH, NH ₃ and		
	sodium ethoxide, Comparison of reactivity of chlorobenzene and benzyl		
	chloride. Benzyne intermediate mechanism.	16	
	C] Alcohols: Dihydric alcohols: Ethylene glycol- Preparation from		
	ethylene, ethylene chloride and ethylene oxide, Reactions- with Na, PCl ₅ ,		
	CH3COOH, ZnCl2, conc. H2SO4 and dehydration with heat. Trihydric		
	alcohols: Glycerol- Preparation from propylene, Reactions with Na, HCl,		
	PC15, HNO3 and KHSO4. Pinacol- pinacolone rearrangement		
	(mechanism).		
Unit 5 Ph	ysical Properties and Molecular Structure		
	A] Electrical Properties: (i) Polar and non-polar molecules. Dipole moment. (ii)		
	Induced polarization and orientation polarization. Clausius Mossotti equation		
	(only qualitative treatment). (iii) Measurement of dipole moment by		
	temperature and refractivity methods. (iv) Applications of dipole moment for		
	the determination of molecular structure. i.e., percentage ionic character of		
	covalent bonding, molecular geometry, cis-trans isomers, ortho, meta and para		
	isomers of a disubstituted benzene.	17	
	B] Magnetic Properties: (i) Paramagnetic and diamagnetic substances, origin of	17	
	Para magnetism, diamagnetism, ferromagnetism and antiferromagnetic. (ii)		
	Volume, specific, mass and molar susceptibility. Relationship between molar		
	magnetic susceptibility and magnetic moment. (iii) Relationship between		
	magnetic moment and number of unpaired electrons. (iv) Gouy's balance		
	method for determination of magnetic susceptibility. (v) Application of		
	magnetic moment in the determination of molecular structure. (vi) Numerical.		
Teaching	Plan for Practical (Second Semester) Class: BSc I	Part-1 Lectures	Lastumas
Sr. No.	Topic to be covered	Available	Lectures Utilized
	Exercise I: Organic Qualitative Analysis		
	Complete analysis of simple organic compounds containing one or two		
	functional groups and involving following steps:		
	1) Preliminary examinations		
	2) Detection of the elements		
	3) Detection of functional groups		
	4) Determination of m.p./ b.p.		
	5) Preparation of derivative and its m.p./b.p.		
	6) Performance of spot test if any.	360	
			İ
	Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid.	300	
		300	
	1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid.	300	
	 Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid. Phenols: Resorcinol, á-naphthol, â-naphthol. 	300	
	 Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid. Phenols: Resorcinol, á-naphthol, â-naphthol. Aldehydes: Benzaldehyde, Glucose. 	300	
	 Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid. Phenols: Resorcinol, á-naphthol, â-naphthol. Aldehydes: Benzaldehyde, Glucose. Bases: Aniline, p-Toluidine 	300	
	 Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid. Phenols: Resorcinol, á-naphthol, â-naphthol. Aldehydes: Benzaldehyde, Glucose. Bases: Aniline, p-Toluidine Nitro compounds: m-Dinitrobenzene. 	300	
	 Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid. Phenols: Resorcinol, á-naphthol, â-naphthol. Aldehydes: Benzaldehyde, Glucose. Bases: Aniline, p-Toluidine Nitro compounds: m-Dinitrobenzene. Amides: Benzamide, Urea, Acetamide. 	300	

	1) To determine surface tension of a given unknown liquid by		
	Stalagmometer (Density measurement is must).		
	2) To determine coefficient of viscosity of unknown liquid by Ostwald's		
	viscometer (Density measurement is must).		
	3) To compare cleaning power of detergent samples by Stalagmometer.		
	4) To determine parachor value of -CH2- group by Stalagmometer.		
	5) To determine unknown percentage composition of given ethanol-water		
	mixture by viscometer.		
	6) To determine activation energy of a reaction between K2S2O8 and KI.		
	7) To determine heat of solution of KNO3.		
Teaching	Plan for Theory (Fourth Semester) Class: BSc Part-2		
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
Unit 2 In	ner Transition Series elements and Metallurgy		
	A] Inner transition elements: Definition, Lanthanides and Actinides.		
	Comparative study of Lanthanides with respect to following properties:(i)		
	Electronic configuration (ii) Atomic and ionic radii lanthanide contraction		
	definition, cause and effect of lanthanide contraction (iii) Oxidation states		
	(iv) Magnetic properties (v) Color of salts (vi) Complex formation		
	behavior. Occurrence of lanthanides. Isolation of lanthanides by ion	16	
	exchange method. Actinides- Electronic configuration and oxidation states.	10	
	Comparison of lanthanides and actinides.		
	B] General Principles of Metallurgy: Definition of metallurgy, steps in		
	metallurgy. Ore dressing by gravity separation, froth floatation and		
	electromagnetic separation. Calcination, roasting, smelting and refining of		
	metals. Meaning of terms hydrometallurgy and pyrometallurgy.		
Unit 5 El	ementary Quantum Mechanics		
	(i) Limitations of classical mechanics. Plank's quantum theory (postulates		
	only). Photoelectric effect - Experiments, observation and Einstein's		
	explanation. Compton effect and its explanation. (ii) de Broglie hypothesis		
	of matter waves. de Broglie's equation. Heisenberg's uncertainty principle.		
	(iii) Classical wave equation, derivation of time independent Schrodinger's		
	wave equation in one-dimension and its extension to a three-dimensional	16	
	wave equation in one-dimension and its extension to a three-dimensional space. Well behaved wave function, physical significance of wave function	16	
		16	
	space. Well behaved wave function, physical significance of wave function (Born interpretation). (iv) Application of Schrodinger wave equation to a	16	
	space. Well behaved wave function, physical significance of wave function	16	
	space. Well behaved wave function, physical significance of wave function (Born interpretation). (iv) Application of Schrodinger wave equation to a particle in one dimensional box and its extension to a three-dimensional	16	
Teaching	space. Well behaved wave function, physical significance of wave function (Born interpretation). (iv) Application of Schrodinger wave equation to a particle in one dimensional box and its extension to a three-dimensional box. Concept of atomic orbital. (v) Numerical		
	space. Well behaved wave function, physical significance of wave function (Born interpretation). (iv) Application of Schrodinger wave equation to a particle in one dimensional box and its extension to a three-dimensional box. Concept of atomic orbital. (v) Numerical Plan for Practical (Fourth Semester) Class: BSc Par		Lectures
Teaching Sr. No.	space. Well behaved wave function, physical significance of wave function (Born interpretation). (iv) Application of Schrodinger wave equation to a particle in one dimensional box and its extension to a three-dimensional box. Concept of atomic orbital. (v) Numerical	rt-2	Lectures Utilized
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	space. Well behaved wave function, physical significance of wave function (Born interpretation). (iv) Application of Schrodinger wave equation to a particle in one dimensional box and its extension to a three-dimensional box. Concept of atomic orbital. (v) Numerical Plan for Practical (Fourth Semester) Class: BSc Par Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu (II), Co (II) and Ni (II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn (II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu (II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO 4 by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk. 2. Isolation of incotine from tobacco leaves. 3. Isolation of lycopene from tomato juice.	Lectures Available	

Sr. No.	Plan for Theory (Sixth Semester) Class: BSc Part-3 Topic to be covered	Lectures	Lectures
	•	Available	Utilized
Unit 1 Ki	netic Aspects of Metal Complexes		
	A] Kinetic Aspects of Metal Complexes: Thermodynamic and kinetic		
	stability of the complexes, factors affecting stability of complexes. Brief		
	idea about substitution reactions, SN1-dissociative and SN2-associative		
	mechanism. Labile and inert complexes. Factors affecting lability of complexes namely arrangement of d-electrons (on the basis of VB theory),		
	size of central metal ion, charge of central metal ion, geometry of		
	complexes. Substitution reactions in square planar complexes mechanism.		
	B] Analytical Chemistry: 1) Spectrophotometry and Colorimetry: Concept		
	of ë max, Beer-Lambert's law (Only statement and final equation, no		
	derivation). Calibration curve and its importance. Validity and limitations		
	of Beer-Lambert's law. Verification of Beer's law. Block diagram of		
	colorimeter and spectrophotometer with brief description of each		
	component and its function. Difference between colorimetric and		
	spectrophotometric technique for determination of concentration of metal		
	ion (Example of determination of Cu (II).		
	2) Paper Chromatography: Definition and classification of		
	chromatographic techniques. Principle of differential migration. Principle		
	and technique of paper chromatography -ascending, descending and		
	circular, Rf value and factors affecting Rf value.		
Teaching	Plan for Theory (Sixth Semester) Class: BSc Part-3		
Sr. No.	Topic to be covered	Lectures	Lectures
31.110.		Available	Utilized
	Exercise I: Organic Chemistry Experiments		
	1. Estimation of formaldehyde.		
	2. Estimation of glycine.		
	3. Estimation of ascorbic acid (vitamin C).		
	4. Estimation of phenol by bromination method.		
	5. Estimation of aniline by bromination method.		
	6. Estimation of urea by hypobromite method.		
	7. Estimation of unsaturation by bromination method.		
	8. Determination of iodine value of oil.		
	9. Determination of equivalent weight of an ester by saponification.		
	10. Separation of a mixture of methyl orange and methylene blue		
	by thin layer chromatography (using benzene).		
	11. Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde		
	and benzaldehyde by thin layer chromatography(using benzene:		
	petroleum ether $= 3:1$).		
	12. Separation of a mixture of dyes by thin layer chromatography	206	
	(using cyclohexane:ethyl acetate $= 8.5:1.5$).	396	
	13. Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde		
	and benzaldehyde by thin layer chromatography (using toluene:		
	and conzulating to by time rayor emornatography (asing totalite.		
	petroleum ether).		
	petroleum ether).		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry.		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by potentiometry.		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by potentiometry. 3. To study potentiometric titration of KCl and AgNO3.		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by potentiometry. 3. To study potentiometric titration of KCl and AgNO3. 4. To determine dissociation constant of dibasic acid by pH-metry.		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by potentiometry. 3. To study potentiometric titration of KCl and AgNO3. 4. To determine dissociation constant of dibasic acid by pH-metry. 5. To verify Beer's Lambart's law using KMnO4/K2Cr2O7.		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by potentiometry. 3. To study potentiometric titration of KCl and AgNO3. 4. To determine dissociation constant of dibasic acid by pH-metry. 5. To verify Beer's Lambart's law using KMnO4/K2Cr2O7. 6. To determine pH of a soil sample by pH-meter.		
	petroleum ether). Exercise II: Physical Chemistry experiments 1. To determine dissociation constant of weak acid by conductometry. 2. To determine dissociation constant of weak acid by potentiometry. 3. To study potentiometric titration of KCl and AgNO3. 4. To determine dissociation constant of dibasic acid by pH-metry. 5. To verify Beer's Lambart's law using KMnO4/K2Cr2O7.		

Time Table Faculty: Dr. V. D. Ingale Subject: CHEMISTRY Period 1 2 3 4 5 6 Day / 08:00 to 11:00 to 11:48 to 12:36 to 01:24 to Time 10:24 11:48 12:36 01:24 2:22 2:30 to 4 2:30 to 4

1 01104	-	_	3	•	2		0
Day /	08:00 to	11:00 to	11:48 to	12:36 to	01:24 to	2.20) to 4:54
Time	10:24	11:48	12:36	01:24	2:22	2.30	104.34
MON	II (P) B ₁		III (T)			II	(P) B ₂
TUE	II (P) B ₁					II	(P) B ₂
WED	III (P)C ₁						
THUS	III (P)C ₁		II (T)				
FRI	I (P) A ₁		I(T)			I	(P) A ₂
		7:30 to	8:18 to	9:16 to		10.04to	12.28 to
		8:18	9:06	10:04		12.28	2.52
SAT				II (T)		I(P) A ₁	I(P) A ₂

Allotted Workload

Subject : CHEMISTRY Year : 2021-2022

Sr.	Class	No.	week	Unit	
No.	Ciass	Lectures	Tutorials	Practical	Allotted
1	B.Sc I	01		4×3=12	01
2	B.Sc II	02		4×3=12	02
3	B.Sc III	01		2×3=06	01
4	Total	04		30	04

Total Workload per week (L+T+P) : 04(L) + 30(P) = 34(27 Hrs.)

Teaching Periods Available per month during the session 2021-22

Faculty: Dr. V D Ingale Subject: CHEMISTRY

		ODD SEMESTER							EVEN SEMESTER			
Class	Periods	SEPT-	OCT	NOV-	DEC	JAN	Total	FEB-	MAR-	APR-	MAY	Total
Class	remous	21	-21	21	-21	-22	Total	22	22	22	-22	Total
BSc I	Theory	00	04	02	05	01	12	03	03	04	04	14
DSC 1	Practical	00	48	30	48	24	150	30	42	48	48	168
DC - II	Theory	01	08	06	08	05	28	05	09	07	08	29
BSc II	Practical	12	42	48	48	30	180	42	48	48	48	186
BSc	Theory	01	04	04	04	03	16	04	04	04	04	16
III	Practical	12	42	36	60	24	174	12	30	21	24	87

Syllabus:

Teaching	Plan for Theory (First Semester) Class: BSc Part I	· · · · · · · · · · · · · · · · · · ·	
Sr. No.	Topic to be covered	Lectures Available 12L	Lectures Utilized
01	Unit-III	12	
	a)Electronic Displacement: Inductive effect, Electromeric effect, Resonance and Hyperconjugation (definition, and applications of these effects)	03	
	b)Reactive Intermediates: Carbocation's, Carbanions and free radicals: their generation stability and reactions	02	
	c) Aliphatic Hydrocarbon: Alkanes: Methods of formation: i) Wurtz reaction and ii) Corey House reaction, Reactions: i) Halogenation (With mechanism), ii) Aromatization. [2] Alkenes: Methods of formation (With mechanism): i) Dehydrohalogenation of alkyl halides (E1 & E2) ii) Dehydration of alcohols, Reactions: Electrophilic and free radical addition of HX and X2 (with mechanism)	03	
	Alkynes: Preparation from vicinal and germinal dihalides, Reaction Hydrogenation	02	
	Alkadienes: Classification,1,3-Butadiene- Preparation from cyclohexene, Reactions- Addition of H ₂ , Br ₂ and HBr.	02	
reaching	Plan for Practical (First Semester) Class : BSc Part	<u> </u>	
- Juling		Lectures	.
Sr. No.	Topic to be covered Exercise 1: Inorganic Qualitative analysis	Available 150L	Lectures Utilized
01	Semi micro qualitative analysis of inorganic salt mixture containing two acidic radicals and two basic radicals of same or different groups. At least six mixtures to be given. Analysis of basic radicals to be done by using spot test reagents. Following radicals to be given carbonate, nitrite, sulphite, sulphide, chloride, bromide, iodide, nitrate and sulphate, Ag(I), Pb(II),Co(II), Bi (III), Cd(II),Sn(II), As(III), Sb (III), Fe(III), Cr(III), Al(III), Ni(II), Co(II), Mn(II), Zn(II), Ca(II), Sr(II),Ba (II), Mg(II)	120	
	Mixture-1	18	
	Mixture-2	18	
	Mixture-3	18	
	Mixture-4	18	
	Mixture-5	12	
	Mixture-6	12	
	Mixture-7	12	
	Mixture-8	12	
02	EXERCISE II: Organic Preparations (10)	30	
V2	1. Preparation of acetanilide (Acetylation).	3	+
	2. Preparation of Benzanilide (Benzoylation).	3	
	3. Preparation of m-di-Nitrobenzene (Nitration).	3	
	4. Preparation of tri-Bromoaniline from Aniline (Bromination).	3	
	5. Preparation of Benzoic acid from Benzamide (Hydrolysis).	3	
	6 . Preparation of Benzoic acid from benzaldehyde (Oxidation).	3	
	7. Preparation of phenylazo $-\beta$ – naphthalol dye (Diazotization).	3	
	8. Preparation of sulphanilic acid from aniline (Sulphonation). Organic Preparations Using Green Chemistry Concept	3	
	9. Acetylation of primary amine (Preparation of acetanilide).	3	
	10. Base catalyzed Aldol Condensation (Synthesis of dibenzal propanone).	3	
Teaching	Plan for Theory (Second Semester) Class: BSc Part I		
Sr. No.	Topic to be covered	Lectures Available 14L	Lectures Utilized

 UNIT-I a)Polarisation: Definition, polarising power, polarizability, effect of polarization on nature of bond. Fajan's rules of polarisation and its applications b) Covalent bonding: Directional nature of covalent bond. Hybridisation, 	04	
polarization on nature of bond. Fajan's rules of polarisation and its applications b) Covalent bonding: Directional nature of covalent bond. Hybridisation,	04	
applicationsb) Covalent bonding: Directional nature of covalent bond. Hybridisation,		
	1	
types of hybridisation to explain geometries of NH ₄ ⁺ ion, PCl ₅ , SF ₆ and	04	
IF ₇		
c) Acids and Bases: Theory of solvent systems and Lux-Flood concept of		
acids and bases. Hard and soft acids and bases. Pearsons HSAB or SHAB	06	
principle with important applications		
Teaching Plan for Practical (Second Semester) Class : BSc Pa	net I	
Teaching Francisca (Second Seniester) Class : DSC 17	Lectures	
Sr. No. Topic to be covered	Available	Lectures
Si. No.	168L	Utilized
EVEDCISE I. Ousseils Ousliteding Ausling (00)	100L	
EXERCISE I: Organic Qualitative Analysis (06) 1) Preliminary examinations		
2) Detection of the elements		
01 3) Detection of the elements	138	
4) Determination of m.p./ b.p.	100	
5) Preparation of derivative and its m.p./ b.p.		
6) Performance of spot test if any.		
1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid.	18	
2) Phenols : Resorcinol, α-naphthol, β-naphthol.	18	
3) Aldehydes : Benzaldehyde, Glucose.	18	
4) Bases : Aniline, p-Toluidine	18	
5) Nitro compounds: m-Dinitrobenzene.	18	
6) Amides: Benzamide, Urea, Acetamide.	18	
7) Hydrocarbons: Naphthalene, Anthracene.	15	
8) Halogen compounds : Chloroform, Chlorobenzene	15	
02 EXERCISE II: Physical Chemistry Exp. (07)	30	
1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must).	4	
2) To determine coefficient of viscosity of unknown liquid by Ostwald's	4	
viscometer (Density measurement is must).	4	
3) To compare cleaning power of detergent samples by Stalagmometer.	5	
4) To determine parachor value of -CH ₂ - group by Stalagmometer.	4	
5) To determine unknown percentage composition of given ethanol-water	4	
mixture by viscometer.	7	
6) To determine activation energy of a reaction between K ₂ S ₂ O ₈ and KI.	5	
7) To determine heat of solution of KNO ₃	4	
Teaching Plan for Theory (Third Semester) Class: BSc Part 1	1	
	Lectures	
Sr. No. Topic to be covered	Available	Lectures
		Utilized
01 UNIT-I & III	28L	
02 UNIT-I	14	
a) Covalent Bonding: Molecular Orbital Theory. Postulates of MO		
theory. LCAO approximation. Formation of bonding and antibonding		
MOs. Rules for LCAO. MO energy level diagram. Concept of bond order.		
MO structure of homonuclear diatomic molecules of namely He ₂ , H ₂ , N ₂		
and O ₂ . Stability sequence of species of O ₂ i.e. O ₂ , O ₂ ⁺ , O ₂ ²⁺ , O ₂ ⁻ and O ₂ ²⁻ .	06	
Paramagnetic nature of O ₂ . MO structure of heteronuclear diatomic		
molecules viz. NO, HF and CO (Coulson's structure). Explanation of		
important properties of CO viz. – triple 15 16 bond, almost nonpolar		
nature, electron donor and acceptor behaviour. Comparison of VB and MO theories		
b) Metallic Bonding: Free electron theory and properties of metals such		+
as electrical and thermal conduction, malleability, ductility and metallic		
lusture. VB theory or Resonance theory of metals. Band theory to explain	03	
nature of conductors, insulators and semiconductors (both intrinsic and	4.5	
extrinsic).		
c)VSEPR Theory: Various rules under VSEPR theory to explain		
molecular geometry (following examples may be taken to explain various	05	
rules- BeCl ₂ , BF ₃ , CH ₄ , NH ₄ +, PCl ₅ , SF ₆ , IF ₇ , SnCl ₂ , NH ₃ , H ₂ O, SF ₄ , ClF ₃ ,		

	BrF ₅ , XeF ₆ , SOF ₄ , COF ₂ , PCl ₃ ,). Limitations of VSEPR theory.		
03	UNIT-III	14	
	A] Aldehydes and Ketones: Preparation of acetaldehyde from ethanol, ethylidene chloride and acetylene. Preparation of benzaldehyde from benzene (Gattermann-Koch reaction) and toluene. Preparation of acetone from isopropyl alcohol, isopropylidene chloride and propyne. Preparation of acetophenone from benzene and ethyl benzene. Structure of carbonyl group, acidity of áhydrogen in carbonyl compounds. Reactions of aldehydes & ketones: Cannizaro's, Reformatsky, Perkin with mechanism, Mannich reaction, Benzoin and Aldol condensations. Clemmensen, Wolf-Kishner, MPV and LiAlH4 reductions.	08	
	B] Carboxylic acids: Structure and reactivity of carboxylic groups. Acidity of carboxylic acids, effects of substituents on acids strength. Oxalic acid: Preparation from ethylene glycol and cyanogen. Reactions: Reaction with ethyl alcohol, ammonia, glycerol and action of heat. Lactic acid: Preparation from acetaldehyde and pyruvic acid. Reactions: Reaction with ethanol, PCl ₅ , action of heat, oxidation and reduction. Benzoic acid: Preparation from toluene, benzyl alcohol, phenyl cyanide and benzamide. Reactions: Reactionwith ethanol, PCl ₅ and ammonia. Salicylic acid: Preparation by Reimer-Tiemann reaction. Reactions: Reaction with CH ₃ COCl,CH ₃ OH and C ₆ H ₅ OH	06	
Teaching	Plan for Practical (Third Semester) Class: BSc Part I	I	
Sr. No.	Topic to be covered	Lectures Available 180 L	Lectures Utilized
01	EXERCISE I: a) Volumetric Analysis (07)	100	
	1) Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution.	15	
	2) Prepare 0.1N H ₂ SO ₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution.	15	
	3) To determine the strength of oxalic acid by titration with KMnO4.	14	
	4) To determine percentage purity of Ferrous Ammonium Sulphate (FAS) by titration with KMnO ₄ .	14	
	5) To determine strength of FAS by titration with K ₂ Cr ₂ O ₇ using internal indicator.	14	
	6) To determine strength of K ₂ Cr ₂ O ₇ by titration with FAS using internal indicator.	14	
02	7) Estimation of copper (II) in commercial copper sulphate sample by iodometric titration	14	
02	b) Gravimetric Analysis (03):	20	
	Estimation of Ba ²⁺ as BaSO ₄	6	
	Estimation of Fe ³⁺ as Fe ₂ O ₃ using china and silica crucible	7	
02	Estimation of Ni ²⁺ as Ni-DMG using sintered glass crucible	7	
03	EXERCISE II: Physical Chemistry Experiment (08)	60	
	 To determine refractive index by Abbe's refractometer. To construct phase diagram of phenol-water system and to determine 	8	
	consolute temperature for the system.	8	
	3) To determine transition temperature of MnCl ₂ .4H ₂ O.	7	
	4) To study kinetics of hydrolysis of methyl acetate catalyzed by acid.	7	
	5) To study kinetics of saponification of ethyl acetate by NaOH. (Equal		
	concentration) 6) To determine partition coefficient of benzoic acid between benzene and	7 8	
	water. 7) To determine partition coefficient of iodine between CCl ₄ /Kerosene	8	
	and water.8) To determine solubility of benzoic acid at different temperature and heat of solution.	7	
Teaching	Plan for Theory (Fourth Semester) Class: BSc Part II		
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	UNIT-III & UNIT-IV	29	S till 200
02	UNIT-III	14	
V-	1 - · · · · · · · · · · · · · · · · · ·		1

	a)Polynuclear Hydrocarbon: Naphthalene - Haworth synthesis, orbital		
	picture, Reactions – electrophilic substitution (orientation) Preparation of	04	
	naphthols from naphthalene sulphonic acids and naphthylamines from	0.1	
	naphthols.		
	b)Reactive Methylene Compounds: Malonic Ester: Synthesis from		
	acetic acid, Synthetic applications- Synthesis of acetic acid, succinic acid,		
	glutaric acid, crotonic acid and malonyl urea. Acetoacetic ester: Synthesis	06	
	from ethyl acetate, Synthetic applications- Synthesis of acetic acid,	00	
	propionic acid, isobutyric acid, succinic acid, glutaric acid, crotonic acid,		
	acetyl acetone and 4-methyl uracil		
	c)Carbohydrates: Constitution of glucose, cyclic structure, Pyranose and		
	Furanose structure, Epimerization, conversion of glucose to fructose and	04	
	vice-versa, Introduction to fructose, ribose, 2- deoxyribose, maltose,	0.1	
	sucrose. (their structures onlydetermination not needed).		
03	UNIT-IV	15	
	a)Aromatic Nitro Compounds: Nitrobenzene: Synthesis from benzene,	03	
	Reduction of nitrobenzene in acidic, neutral and alkaline medium	03	
	b)Amino Compounds: Basicity and effect of substituents. Methods of		
	preparation of aniline from nitrobenzene, Reactions: with acetyl and	04	
	benzoyl chlorides,Br ₂ (aq) and Br ₂ (CS ₂), Carbylamine reaction,	U 4	
	alkylation, Hoffmann's exhaustive methylation and its mechanism.		
· · ·	c)Diazonium Salts: Preparation benzene diazonium chloride, Synthetic		
	applications- Preparation of benzene, phenol,	03	
	halobenzene,nitrobenzene,benzonitrile, coupling with phenol and aniline		
· · ·	d)amino Acids and Proteins: Classification, Strecker and Gabrial		
	phthalimide synthesis, Zwitterion structure, Isoelectric point, peptide	04	
	synthesis, Structure determination of polypeptides by end group analysis		
04	UNIT TEST	01	
Teaching	Plan for Practical I (Fourth Semester) Class: BSc Part	II	*
		Lectures	_
Sr. No.	Topic to be covered	Available	Lectures
51.110.	Topic to be covered	186L	Utilized
01	EXEDITED 1 P. 1. (AC)	126	
01	EXERCISE I: Inorganic Estimation (06)	120	
	1) Chromatographic separation of binary mixture containing Cu(II), Co(II)	21	
	and Ni(II) ions by paper chromatography and determination of Rf values.		
	2) Estimation of Zn(II) by complexometric titration.	21	
	3) To determine the strength of unknown calcium salt solution by	21	
	compleyometric titration		
	complexometric titration.		
	4) Estimation of hardness of water by complexometric titration.	21	
	4) Estimation of hardness of water by complexometric titration.5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial	21 21	
	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex.		
	 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO₄ solution from 		
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	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by calorimetrically or spectrophotometrically	21	
02	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07)	21	
02	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by calorimetrically or spectrophotometrically	21	
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02	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves.	21 21 60 8 9	
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	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid	21 21 60 8 9 9 8 9 8 9 8 Lectures	Lectures
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Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered	21 21 60 8 9 9 8 9 8 9 8 Lectures	
Teaching Sr. No.	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV	21 21 60 8 9 9 8 9 8 9 8 Lectures Available	
Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV UNIT-IV a)Dyes: Classification on the basis of structure and mode of application,	21 21 60 8 9 9 8 9 8 9 8 Lectures Available 16	
Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV UNIT-IV a)Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein,	21 21 60 8 9 9 8 9 8 9 8 Lectures Available	
Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV a)Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein , Alizarin and Indigo	21 21 60 8 9 9 8 9 8 9 8 Lectures Available 16	
Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV unit-IV a)Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein , Alizarin and Indigo b)Drugs: Analgesic and antipyretics: Synthesis and uses of	21 21 60 8 9 9 8 9 8 9 8 Lectures Available 16	
Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV a)Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein , Alizarin and Indigo b)Drugs: Analgesic and antipyretics: Synthesis and uses of phenylbutazone. Sulpha drugs: Synthesis and uses of sulphanilamide and	21 21 60 8 9 9 8 9 8 9 8 Lectures Available 16	
Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV UNIT-IV a)Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein , Alizarin and Indigo b)Drugs: Analgesic and antipyretics: Synthesis and uses of phenylbutazone. Sulpha drugs: Synthesis and uses of sulphanilamide and sulphadiazine. Antimalarials: Synthesis of chloroquine from 4,7	21 21 60 8 9 9 8 9 8 9 8 Lectures Available 16	
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Teaching Sr. No. 01	4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO4 solution from standard solutions of KMnO4 by calorimetrically or spectrophotometrically EXERCISE II: Organic Practical (07) 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffeine from tea leaves. 4. Isolation of lycopene from tomato juice. 5. Estimation of glucose. 6. Estimation of acetamide. 7. Determination of equivalent weight of an organic acid Plan for Theory (Fifth Semester) Class: BSc Part III Topic to be covered UNIT-IV UNIT-IV a)Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein , Alizarin and Indigo b)Drugs: Analgesic and antipyretics: Synthesis and uses of phenylbutazone. Sulpha drugs: Synthesis and uses of sulphanilamide and sulphadiazine. Antimalarials: Synthesis of chloroquine from 4,7	21 21 60 8 9 9 8 9 8 9 8 Lectures Available 16	

	Fungicides: Synthesis and uses of thiram (tetramethyl thiuram disulphide.		
05	UNIT TEST	01	
	Plan for Practical (Fifth Semester) Class: BSc Part 1		
Teaching	Tian for Fractical (Firth Schiester) Class: BSC Fart	Lectures	
Sr. No.	Topic to be covered	Available	Lectures
51. 140.	Topic to be covered	174L	Utilized
01	EVED CISE I. Inorgania Dranavation (06)	60	
U1	EXERCISE I: Inorganic Preparation (06)		
	1. Preparation of tetraamminecopper (II)sulphate.	6	
	2. Preparation of hexaamminenickel (II)chloride.	6	
	3. Preparation of potassiumtrioxalate aluminate (III).	6	
	4. Preparation of Prussian blue.	6	
	5. Preparation of chrome alum.	6	
	6 . Preparation of sodium thiosulphate and dithionite. (Comment on VB	6	
0.2	structure, magnetic properties and color of 1, 2 and 3 complexes)	114	
02	EXERCISE II: Physical Chemistry Experiments (06)	114	
	1. To determine strength of given HCl solution conductometrically.	17	
	2 . To determine strength of given CH ₃ COOH solution conductometrically.	17	
	3 . To determine strength of given HCl solution potentiometrically.	16	
	4 . To determine strength of HCl and CH ₃ COOH in a given mixture	16	
	conductometrically.		-
	5 . To determine redox potential of Fe ⁺² /Fe ⁺³ system potentiometrically.	16	
	6. To determine molecular weight by Rast's method.	16	
	7. To determine specific rotation of optically active compound by	16	
m	Polarimeter.		
Teaching	Plan for Theory (Sixth Semester) Class: BSc Par		T -
Sr. No.	Topic to be covered	Lectures	Lectures
	<u>-</u>	Available	Utilized
01	UNIT-II	16	
04	UNIT-II		
	a)Organometallic Chemistry: Definition, nomenclature and		
	classification of organometallic compounds. Metal carbonyls- definition	05	
	and classification. Preparation, properties, structure and bonding in Ni(CO) ₄ , Fe(CO) ₅ , Cr(CO) ₆ . Nature of M-C bond in metal carbonyls.	05	
	141(CO)4, 1°C(CO)5, C1(CO)6. Nature of 141-C bond in metal carbonyis.		
	b)Inorganic Polymer: Definition and classification. Silicones:		
	preparation, properties structure and bonding and applications.	0.5	
	Phosphonitrile halides polymers- preparation, properties, structure and	05	
	bonding in cyclic polymers		
	c)Bioinorganic Chemistry: Essential and trace elements in biological		
	processes. Biological role of Na ⁺ , K ⁺ , Ca ²⁺ and Mg ²⁺ ions.	05	
	Metalloporphyrins-Haemoglobin and Myoglobin and their role in oxygen	0.5	
05	transport LINE TEST	01	
05	UNIT TEST	01	
Teaching	Plan for Practical (Sixth Semester) Class: BSc Par		1
0.37		Lectures	Lectures
Sr. No.	Topic to be covered	Available	Utilized
		87L	
01	EXERCISE I: Organic Chemistry Preparation (13)	47	
	1. Estimation of formaldehyde.	3	
	2. Estimation of glycine.	4	
	3. Estimation of ascorbic acid (vitamine C).	4	
	4 . Estimation of phenol by bromination method.	4	
	5 . Estimation of aniline by bromination method.	4	
	6 . Estimation of urea by hypobromite method.	4	
	7 . Estimation of unsaturation by bromination method.	4	
	8. Determination of iodine value of oil.	4	
	9. Determination of equivalent weight of an ester by saponification.	4	
	10. Separation of a mixture of methyl orange and methylene blue by thin	А	
	layer chromatography (using benzene).	4	
	11. Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde and		
	benzaldehyde by thin layer chromatography(using benzene : petroleum	4	
	ether = 3:1).		
	12. Separation of a mixture of dyes by thin layer chromatography (using	4	
	cyclohexane:ethyl acetate = 8.5:1.5).		1

	13. Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde and benzaldehyde by thin layer chromatography (using toluene: petroleum ether).	3	
02	EXERCISE II: Physical Chemistry Experiments (08)	40	
	1. To determine dissociation constant of weak acid by conductometry.	5	
	2. To determine dissociation constant of weak acid by potentiometry.	5	
	3. To study potentiometric titration of KCl and AgNO ₃ .	5	
	4 . To determine dissociation constant of dibasic acid by pH-metry.	5	
	5. To verify Beer's Lambart's law using KMnO ₄ /K ₂ Cr ₂ O ₇ .	5	
	6 . To determine pH of a soil sample by pH-meter.	5	
	7 . To determine solubility and solubility product of sparingly soluble salts conductometrically.	5	
	8 . To study strong acid and strong base titration by pH-metry. Distribution of Marks for Practical Examination	5	

Time Table:

Name: Mr. Nilesh S. Shelke

Faculty: SCIENCE Subject: CHEMISTRY

Period	1	2	3	4	5	6
	Practical	Theory				Practical
Day/	8 to 10:24	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to
Time	(pract)	11:48	12:36	1:24	2:22	4:46(Pract.)
MON	II (Pract) B-					II (Pract) B-2
TUE	II (Pract) B-					II (Pract) B-2
	1	III(Theory)				
WED				II(Theory)		III (Pract) C-2
THUS						III (Pract) C-2
FRI	I (Pract) A-1	III(Theory)				I (Pract) A -2
		7:30 - 8:18	8:18 - 9:06	9:16 - 10:04	10:04- 12:28	12:28 -2:52
SAT		I (Theory)			I (Pract) A-1	I (Pract) A-2

Allotted Workload

Subject : CHEMISTRY Year : 2021-22

Sr. No.	Class	Work load			
		Lecture (Theory)	Practical	Paper Alloted	
1	B.Sc I	01	$4 \times 3 = 12$	1	
2	B.Sc. – II	01	$4 \times 3 = 12$	1	
3	B.Sc III	02	$2 \times 3 = 06$	1	
Total Workload per week (Th +Pract.): 04 (The) + 30 (Pract.) = 34 (27 Hrs. 12 min.)					

Teaching Periods Available per month during the session 2021-22Faculty: SCIENCE Subject: Cl

Subject: CHEMISTRY

	-	ODD SEMESTER					EVEN SEMESTER					
Class	Periods	SEP- 2021	OCT -2021	NOV- 2021	DEC - 2021	JAN -2022	Total	FEB- 2022	MAR- 2022	APR - 2022	MAY- 2022	Total
DC a I	Theory		04	03	03	03	17	03	04	04	04	15
BSc-I Practical			48	30	48	24	150	30	42	48	48	168
DC- H	Theory	01	03	03	05	02	14	04	05	04	04	17
BSc –II	Practical	12	42	48	48	24	174	42	48	48	48	186
Theory		01	07	06	09	04	27	08	07	08	08	31
BSc- III	Practical	06	21	18	30	12	87	18	30	21	24	93

Teaching	Plan for Theory (First Semester) Class : BSc Part I		
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Unit- I	17	
01	Periodic Properties	15	
A]	Periodic Properties: Atomic and ionic radii Types of atomic radii (only definitions - covalent radius, metallic radius, Van der Wall's radius and ionic radius). Periodic trends in atomic and ionic radii. Ionization energy, electron affinity and electronegativity (definition and periodic trends). Effect of ionization energy and electronegativity on different properties of elements namely metallic and non-metallic character, relative reactivity, oxidizing and reducing properties., Scales of electronegativity Pauling scale and Mulliken Scales. Electronegativity and partial ionic character of a covalent bond. Screening effect, screening constant and effective nuclear charge. Slater's rules for calculating screening constant. Problems.	8	
В]	Ionic bonding: Definition of ionic bond, types of cations. Factors affecting ionic bond formation (energetic of ionic bond formation ionization energy, electron affinity and lattice energy). Born Lande equation (no derivation) to calculate lattice energy. Born-Haber's cycle to determine lattice energy. Solvation and salvation energy, factors affecting salvation energy, Determination of salvation energy. Solubility of ionic solids, lattice energy and salvation energy	4	
C]	Unit Test	01	
Sr. No.	Plan for Practical (First Semester) Class : BSc Part I Topic to be covered	Lectures Available	Lectures Utilized
01	Exercise 1: Inorganic Qualitative analysis	80	
	Semi micro qualitative analysis of inorganic salt mixture containing two acidic radicals and two basic radicals of same or different groups. Analysis of basic radicals to be done by using spot test reagents. Following radicals to be given carbonate, nitrite, sulphite, sulphide, chloride, bromide, iodide, nitrate and sulphate, Ag(I), Pb(II),Co(II), Bi (III), Cd(II),Sn(II), As(III), Sb (III), Fe(III), Cr(III), Al(III), Ni(II), Co(II), Mn(II), Zn(II), Ca(II), Sr(II),Ba (II), Mg(II).		
02	Exercise II: Organic Preparations	70	
-	1. Preparation of acetanilide (Acetylation).	6	
	2. Preparation of Benzanilide (Benzoylation).	6	
1.1.1 [C]	Departmental Academic Calendars	Page 65	of 148

	3. Preparation of m-di-Nitrobenzene (Nitration).	6	
	4. Preparation of tri-Bromoaniline from Aniline (Bromination).	9	
	5. Preparation of Benzoic acid from Benzamide (Hydrolysis).	6	
	6. Preparation of Benzoic acid from benzaldehyde (Oxidation).	6	
	7. Preparation of phenylazo $-\beta$ – naphthalol dye (Diazotization).	9	
	8. Preparation of sulphanilic acid from aniline (Sulphonation). organic	9	
	Preparations Using Green Chemistry Concept		
	9. Acetylation of primary amine (Preparation of acetanilide).	7	
m 11	10. Base catalyzed Aldol Condensation (Synthesis of dibenzal propanone).	6	
Teaching	Plan for Theory (Second Semester) Class: BSc Part I	Lectures	Lectures
Sr. No.	Topic to be covered	Available	Utilized
0.1	Unit II – P Block , Noble, Acids and Bases	15	
01	Unit- II P-Block Elements-	15	
	Comparative study of 16th and 17th group elements with reference to		
A]	electronic configuration, ionization energy and oxidation states. Oxidising	06	
Aj	properties of halogens with reference to oxidation potential. Interhalogen	00	
	compounds, structure and bondings. Introduction to fluorocarbons.		
	Noble Gases-		
B]	Inertness of noble gases. Compounds of noble gases-only structure and	02	
	bonding in XeF ₂ , XeF ₄ ,XeF ₆ , XeO ₃ and XeO ₄		
	Acids and Bases-		
C]	Theory of solvent systems and Lux-Flood concept of acids and bases.	06	
0,	Hard and soft acids and bases. Pearsons HSAB or SHAB principle with	00	
D1	important applications. [6]	0.1	
D]	Unit Test Plan for Practical (Second Semester) Class: BSc Part I	01	
Ŭ		Lectures	Lectures
Sr. No.	Topic to be covered	Available	Utilized
01	Exercise I: Organic Qualitative Analysis	84	
V1			
01	1) Preliminary examinations	03	
01	2) Detection of the elements	03	
01	Detection of the elements Detection of functional groups	03 03	
V1	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p.	03 03 03	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p.	03 03	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any.	03 03 03	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid	03 03 03 06 06	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol.	03 03 03 06 06	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose.	03 03 03 06 06 06	
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	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene.	03 03 03 06 06 06	
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02	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments	03 03 03 06 06 09 09 09 09 09	
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	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments 1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must).	03 03 03 06 06 09 09 09 09 09 09 09 84	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments 1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must). 2) To determine coefficient of viscosity of unknown liquid by Ostwald's	03 03 03 06 06 09 09 09 09 09 09 09 84	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments 1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must). 2) To determine coefficient of viscosity of unknown liquid by Ostwald's viscometer (Density measurement is must).	03 03 03 06 06 09 09 09 09 09 09 12	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments 1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must). 2) To determine coefficient of viscosity of unknown liquid by Ostwald's viscometer (Density measurement is must). 3) To compare cleaning power of detergent samples by Stalagmometer.	03 03 03 06 06 09 09 09 09 09 06 09 84 12 12	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments 1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must). 2) To determine coefficient of viscosity of unknown liquid by Ostwald's viscometer (Density measurement is must). 3) To compare cleaning power of detergent samples by Stalagmometer. 4) To determine parachor value of -CH ₂ - group by Stalagmometer.	03 03 03 06 06 09 09 09 09 09 06 09 84 12 12 12	
	2) Detection of the elements 3) Detection of functional groups 4) Determination of m.p./ b.p. 5) Preparation of derivative and its m.p./ b.p. 6) Performance of spot test if any. 1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid 2) Phenols: Resorcinol, á-naphthol, â-naphthol. 3) Aldehydes: Benzaldehyde, Glucose. 4) Bases: Aniline, p-Toluidine 5) Nitro compounds: m-Dinitrobenzene. 6) Amides: Benzamide, Urea, Acetamide. 7) Hydrocarbons: Naphthalene, Anthracene 8) Halogen compounds: Chloroform, Chlorobenzene. Exercise II: Physical Chemistry Experiments 1) To determine surface tension of a given unknown liquid by Stalagmometer (Density measurement is must). 2) To determine coefficient of viscosity of unknown liquid by Ostwald's viscometer (Density measurement is must). 3) To compare cleaning power of detergent samples by Stalagmometer. 4) To determine parachor value of -CH ₂ - group by Stalagmometer. 5) To determine unknown percentage composition of given ethanol-water	03 03 03 06 06 09 09 09 09 09 06 09 84 12 12	
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Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance of electrolyte solution, variation of specific and equivalent conductance with dilution for strong electrolyte. Conductometric titration.	Sr. No.	Topic to be covered Unit- I Crystalline Solid		Utilized
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Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance of electrolyte solution, variation of specific and equivalent conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. (ii) Migration of ions under the influence of electric field. Transport number of ions. Determination of transport number by Hottorf's method and Moving boundary method (iii) Kohlrausch's law of independent migration of ions. Determination of dissociation constant of weak electrolyte. (iv) Numericals C] Unit Test		_		Utilized
Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. (ii) Migration of ions under the influence of electric field. Transport number of ions. Determination of transport number by Hottorf's method and Moving boundary method (iii) Kohlrausch's law of independent migration of ions. Determination of l¥ and degree of dissociation a of a weak electrolyte. Determination of dissociation constant of weak electrolyte. (iv) Numericals C] Unit Test Dots Viscosity, determination of viscosity, derivation of expression for relative viscosity, derivative on viscosity,	Sr. No.	Topic to be covered		Lectures
Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. (ii) Migration of ions under the influence of electric field. Transport number of ions. Determination of transport number by Hottorf's method and Moving boundary method (iii) Kohlrausch's law of independent migration of ions. Determination of l¥ and degree of dissociation a of a weak electrolyte. Determination of dissociation constant of weak electrolyte. (iv) Numericals C] Unit Test Dots Viscosity, determination of viscosity, derivation of expression for relative viscosity, derivative on viscosity,	Teaching l	Plan for Practical (Third Semester) Class : BSc Part II		
Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance of electrolyte solution, variation of specific and equivalent conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. (ii) Migration of ions under the influence of electric field. Transport number of ions. Determination of transport number by Hottorf's method and Moving boundary method (iii) Kohlrausch's law of independent migration of ions. Determination of l¥ and degree of dissociation a of a weak electrolyte. Determination of		Unit Test	01	
Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance of electrolyte solution, variation of specific and equivalent conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. (ii) Migration of ions under the influence of electric field. Transport		and Moving boundary method (iii) Kohlrausch's law of independent migration of ions. Determination of I¥ and degree of dissociation a of a weak electrolyte. Determination of		
Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer method. Applications of viscosity. Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar	B]	variation of specific and equivalent conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. (ii) Migration of ions under the influence of electric field. Transport	09	
Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer		Electrochemistry: (i) Conductance of electrolyte solution. Specific, equivalent and molar		
		Drop number method. Application of surface tension. (ii) Viscosity, determination and its S.I. Unit. Effect of temperature on viscosity, derivation of expression for relative viscosity by Ostwald's viscometer		

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	Commence dans de consectado		
A]	Symmetry in crystal: plane of symmetry, axis of symmetry and point of symmetry. Law of constancy of interfacial angles. Elements of symmetry in cubic crystals. Laws of symmetry. Law of rational indices, Weiss and Miller indices of a lattice planes, calculation of interplaner distance d(h,k,l) from Miller indices in a cubic system. Seven crystal systems and fourteen Bravais lattices, Bravais lattices of cubic system.	09	
В]	Type of cubic crystal: Simple cubic system (S.C.C.), body centered cubic system (B.C.C.) and face centered cubic system (F.C.C.). Calculation of number of constituent units in S.C.C., B.C.C. and F.C.C. Ratio of interplaner distances for 100, 110 and 111 lattice plane in S.C.C., B.C.C. and F.C.C. (No geometrical derivation). Derivation of Bragg's equation for X-ray diffraction, Bragg's X-ray spectrometer method for the determination of crystal structure of NaCl and KCl. Anomalous behaviour of KCl towards X-ray. Numericals	07	
C]	Unit Test	01	
Teaching	Plan for Practical (Fourth Semester) Class: BSc Part 1	П	
Sr. No.	·	Lectures	Lectures
	Topic to be covered	Available	Utilized
01	Exercise I: Inorganic estimations	93	
	1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values.	18	
	2) Estimation of Zn(II) by complexometric titration.	15	
	3) To determine the strength of unknown calcium salt solution by complexometric titration.	15	
	4) Estimation of hardness of water by complexometric titration.5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial	15	
	copper sulphate sample as ammonia complex.	15	
	6)To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically.	15	
02	Evancies II. Ouganie Chamistur Ducaticals	93	
02	Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk.	12	
	Isolation of casem from mink. Isolation of nicotine from tobacco leaves.	12	
	3. Isolation of caffine from tea leaves.	12	
	Isolation of lycopene from tomato juice.	12	
	5. Estimation of glucose.	15	
	6. Estimation of acetamide.	15	
	7. Determination of equivalent weight of an organic acid.	15	
Teaching	Plan for Theory (Fifth Semester) Class: BSc Pa	rt III	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Unit-V & Unit-VI	27	Cilizeu
01	Unit V-Photochemistry	14	
A]	Photochemical and thermal reactions. Lambert's law - Statement and derivation. Beer's law - Statement and derivation. Reasons for deviation from Beer's law. Laws of photochemistry. Quantum yield of photochemical reaction. Reasons for high and low quantum yield. Experimental determination of quantum yield. Photosensitized reaction.	06	
B]	Kinetics of photochemical reaction decomposition of HI. Fluorescence and Phosphorescence. Selection rule for electronic transition. Internal conversion and inter-system crossing. Explanation of fluorescence and phosphorescence on the basis of Joblonski diagram. Chemiluminescence and Bioluminescence with	07	

	examples. Numericals.		
C]	Unit Test	01	
02	Unit VI – Molecular spectroscopy	13	
A]	Electromagnetic radiation Characteristics of electromagnetic radiation in terms of wavelength, wave number, frequency and energy of photon. Spectrum of electromagnetic radiation. Types of spectra - Emission and absorption spectra, atomic and molecular spectra, line and band spectra Translational, vibrational, rotational and electronic motion. The degree of freedom in each motion. Energy level diagram of a molecule indicating electronic, Vibrational and rotational transitions. Condition for pure rotational spectrum (i.e.microwave active molecules), selection rule for rotational transition. Derivation of expression for moment of inertia of a diatomic rigid rotor. Isotope effect. Applications of microwave spectroscopy for the determination of moment of inertia and bonding. Condition for exhibiting vibrational spectra (i.e. IR active molecule), selection rule for vibrational transition. Vibrational energy levels of a simple harmonic oscillator. zero point energy, position of a	09	
B]	spectral line. Determination of force constant of a covalent bond. Raman spectroscopy- Raman effect - Raman's spectrum of a molecule. Condition for exhibiting Raman spectrum (i.e. Raman active molecule), selection rule for rotational transitions. Pure rotational spectrum of diatomic molecule, vibrational Raman spectrum of a diatomic molecule. Numericals.	03	
C]	Unit Test	01	
_	Plan for Practical (Fifth Semester) Class: BSc P		
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Exercise 1: Inorganic Preparations	42	Utilized
	1. Preparation of tetraamminecopper(II)sulphate.	06	
	Preparation of hexaamminenickel(II)chloride.	06	
	3. Preparation of potassiumtrioxalate aluminate(III).	06	
	4. Preparation of Prussian blue.	06	
	5. Preparation of chrome alum.	06	
	6. Preparation of sodium thiosulphate and dithionite. Comment on VB structure, magnetic properties and color of 1, 2 and 3 complexes	12	
02	Exercise II: Physical Chemistry experiments	45	
	1. To determine strength of given HCl solution conductometrically.	06	
	2. To determine strength of given CH ₃ COOH solution conductometrically.	06	
	 3. To determine strength of given HCl solution potentiometrically. 4. To determine strength of HCl and CH₃COOH in a given mixture conductometrically. 	06 06	
	5 . To determine redox potential of Fe ⁺² /Fe ⁺³ system potentiometrically.	06	
	6. To determine molecular weight by Rast's method.	06	
	7. To determine specific rotation of optically active compound by Polarimeter.	09	
Teaching	Plan for Theory(Sixth Semester) Class: BSc Par		
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Unit-V & Unit- VI	31	
01	Unit-V - Elementary Quantum Mechanics Classical quantum mechanics: Plank's quantum theory (postulates only). Photoelectric effect - experiments, observation and Einstein's explanation. Compton effect and its explanation. De Broglie hypothesis of matter waves. de Broglie's equation. Heisenberg's uncertainty principle. Classical wave equation, derivation of time independent equation.	16 10	
	Departmental Academic Calendars		

	Schrodinger's wave equation:		
	Schrödinger's wave equation in one-dimension and its extension to a		
	three-dimensional space. Well behaved wave function, physical		
D 1	significance of wave function (Born interpretation).	04	
B]	Application of Schrodinger wave equation to a particle in one-dimensional	U 4	
	box and its extension to a three-dimensional box. Concept of atomic		
	orbital.		
Cl	Numericals based on Schrodinger wave equation.	0.1	
C] 02	Unit Test Unit VI- Electrochemistry & Nuclear Chemistry	01 15	
02	Electrochemistry:	13	
	Types of electrode - Standard hydrogen electrode, Calomel electrode,		
	Quinhydrone electrode and Glass electrode. Principle of Potentiometric		
	titration. Study of acid-base, redox and precipitation titration.		
A]	pH of a solution and pH scale. Determination of pH of a solution using	06	
1-1	hydrogen, quinhydrone and glass electrodes. Advantage and disadvantage	00	
	of these electrodes. pH-metric titrations. Determination of pka of a weak		
	acid by pH-metric measurement. Concentration cells - Types of concentration cells, concentration cell without transfer and determination		
	of its emf. Numericals		
	Nuclear Chemistry:		
	Shell model of a nucleus - Assumptions, evidences for existence of magic		
	numbers, advantages and limitations.		
	Liquid drop model of a nucleus - Assumptions, similarities between		
	nucleus and liquid drop, advantages and limitations, explanation of		
	nuclear fission reaction on the basis of liquid drop model. Nuclear force and its explanation on the basis of Meson theory.		
	Characteristics of nuclear reaction, difference between nuclear and		
B]	chemical reactions. Calculation of Q value of a nuclear reaction.	06	
	Characteristics of nuclear fission reaction, fission yield. Fission reaction		
]	as an alternative source of energy.		
	Nuclear fusion reaction - Characteristic of a nuclear fusion reaction.		
	Nuclear fusion reaction - Characteristic of a nuclear fusion reaction. Thermonuclear reactions as a source of energy of sun and other stars.		
	Nuclear fusion reaction - Characteristic of a nuclear fusion reaction. Thermonuclear reactions as a source of energy of sun and other stars. Fusion reactions as a potential future source of energy.		
	Nuclear fusion reaction - Characteristic of a nuclear fusion reaction. Thermonuclear reactions as a source of energy of sun and other stars. Fusion reactions as a potential future source of energy. Applications of radio isotopes in industry, agriculture, medicines and bio-		
	Nuclear fusion reaction - Characteristic of a nuclear fusion reaction. Thermonuclear reactions as a source of energy of sun and other stars. Fusion reactions as a potential future source of energy. Applications of radio isotopes in industry, agriculture, medicines and biosciences with two examples each.		
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Teaching Sr. No.	Nuclear fusion reaction - Characteristic of a nuclear fusion reaction. Thermonuclear reactions as a source of energy of sun and other stars. Fusion reactions as a potential future source of energy. Applications of radio isotopes in industry, agriculture, medicines and biosciences with two examples each. Numericals. Unit Test Plan for Practical (Sixth Semester) Class: BSc Paragration of formaldehyde. 2. Estimation of formaldehyde. 3. Estimation of ascorbic acid (vitamine C). 4. Estimation of phenol by bromination method. 5. Estimation of aniline by bromination method. 6. Estimation of urea by hypobromite method. 7. Estimation of unsaturation by bromination method. 8. Determination of equivalent weight of an ester by saponification. 10. Separation of a mixture of methyl orange and methylene blue by thin layer chromatography (using benzene). 11. Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde and benzaldehyde by thin layer chromatography (using cyclohexane:ethyl acetate = 8.5:1.5). 13. Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde and cyclohexane:ethyl acetate = 8.5:1.5).	Lectures Available 43 03 03 03 03 03 03 03 03 03	
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1. To determine dissociation constant of weak acid by conductometry.	06	
2. To determine dissociation constant of weak acid by potentiometry.	06	
3. To study potentiometric titration of KCl and AgNO ₃ .	06	
4. To determine dissociation constant of dibasic acid by pH-metry.	06	
5 . To verify Beer's Lambart's law using KMnO ₄ /K ₂ Cr ₂ O ₇ .	06	
6 . To determine pH of a soil sample by pH-meter.	06	
7. To determine solubility and solubility product of sparingly soluble salts conductometrically.	06	
8. To study strong acid and strong base titration by pH-metry. Distribution of Marks for Practical Examination	08	

Time Table

Name: Mr. K P Sabale

Faculty: SCIENCE Subject: CHEMISTRY

acuity. BC	ILIVIID I IC I					
Period	1	2	3	4	5	6
	Practical		Theory			Practical
Day /	8 to	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to
Time	10:24(Pr)	11:48	12:36	1:24	2:22	4:46(Pr)
MON	$II(B_1)$			I(T)		$II(B_2)$
TUE	$II(B_1)$		I(T)			$II(B_2)$
WED	$III(C_1)$		III(T)			$III(C_2)$
THUS	$III(C_1)$		III(T)			$III(C_2)$
FRI	$I(A_1)$			II(T)		
		7:30 to	8:18 to	9:06 to	10:04 to	12:28 to
		8:18	9:06	9:54	12:28	2:52
SAT					BSc-	
5711					$I(P)(A_1)$	

Allotted Workload

Subject: CHEMISTRY Year: 2021-22

		workload					
Sr. No.	Class	Lectures	Practical	Paper Allotted			
1	BSc-I	02	$2 \times 3 = 6$	2			
2	BSc-II	01	4 x 3 = 12	1			
3	BSc-III	02	4 x 3 = 12	2			
4	Total	05(Th)	30(Pr)	05			

Total Workload per week (L+P): 05 (L) + 30 (Pr) = 35 (28 Hrs.)

Teaching Periods Available per month during the session 2021-22Faculty: SCIENCE Subject: CHEMI

Subject: CHEMISTRY

	-	ODD SEMESTER					EVEN SEMESTER					
Class	Periods	SEP- 2021	OCT -2021	NOV- 2021	DEC - 2021	JAN - 2022	Total	FEB- 2022	MAR- 2022	APR - 2022	MAY- 2022	Total
DC- I	Theory	02	07	08	08	04	29	07	08	08	08	31
BSc-I	Practical		24	15	24	12	75	15	21	24	24	84
BSc –II	Theory		04	02	05	01	12	03	03	04	04	14
DSC -II	Practical	12	42	48	48	24	174	42	48	48	48	186
BSc- III	Theory	02	07	06	10	04	29	06	10	07	08	31
DSC- III	Practical	12	42	36	60	24	174	36	60	42	48	186

Sr. No.	Plan for Theory (First Semester) Class: B.Sc Part I Topic to be covered	Lectures Available	Lectures Utilized
	Unit- II & Unit-VI	29	Ctilized
01	Unit II	15	
	S-Block element:		
A]	Comparative study of 1st and 2nd group elements with reference to electronic configuration, ionisation energy, oxidation states, reactivity and flame colouration. Diagonal relationship between Li and Mg.	04	
	P-Block element:		
B]	Comparative study of 13th, 14th and 15th group elements with reference to electronic configuration, ionisation energy, oxidation states. Concept of inert pair effect. Diagonal relationship between Be and Al. Structure of diamond and graphite. Abnormal behaviour of nitrogen. Hydrides of boron- preparation(from BCl ₃ and NaBH ₄ two), properties(action of heat, water, alkali and oxygen), structure and bonding in diborane. Carbides, types of carbides and fullerenes.	10	
C]	Unit Test	01	
02	Unit-VI	14	
A]	Gaseous State: Postulates of Kinetic theory of gases, Derivation of Kinetic gas equation. RMS, Average and Most probable velocities and their relationship. Maxwell-Boltzmann distribution law of molecular velocities (only qualitative treatment), Mean free path, collision number and collision diameter. Deviation of real gases from ideal gas behavior. Vanderwaal's equation of state and its derivation for real gases. Critical phenomenon, Andrew's experiment – isotherm of CO ₂ . Critical state, critical constant, Pc, Vc and Tc in terms of Vander Waal's constants 'a' and 'b'. Reduced equation of state and its derivation. Law of corresponding state. Numericals.	11	
	Phase Rule:		
B]	Statement of phase rule, explanation of phase, number of components and degree of freedom. Application of phase rule to water and sulfur system.	02	
C]	Unit Test	01	
Teaching	Plan for Practical (First Semester) Class: BSc Part I		
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Exercise 1: Inorganic Qualitative analysis	40	

02	Semi micro qualitative analysis of inorganic salt mixture containing two acidic radicals and two basic radicals of same or different groups. At least six mixtures to be given. Analysis of basic radicals to be done by using spot test reagents. Following radicals to be given carbonate, nitrite, sulphite, sulphide, chloride, bromide, iodide, nitrate and sulphate, Ag(I), Pb(II),Co(II), Bi (III), Cd(II),Sn(II), As(III), Sb (III), Fe(III), Cr(III), Al(III), Ni(II), Co(II), Mn(II), Zn(II), Ca(II), Sr(II),Ba (II), Mg(II). Exercise II: Organic Preparations 1. Preparation of acetanilide (Acetylation). 2. Preparation of Benzanilide (Benzoylation). 3. Preparation of m-di-Nitrobenzene (Nitration).	35	
	4. Preparation of tri-Bromoaniline from Aniline (Bromination).		
	5. Preparation of Benzoic acid from Benzamide (Hydrolysis).		
	 6. Preparation of Benzoic acid from benzaldehyde (Oxidation). 7. Preparation of phenylazo – β – naphthalol dye (Diazotization). 		
	8. Preparation of sulphanilic acid from aniline (Sulphonation). Organic		
	Preparations Using Green Chemistry Concept		
	9. Acetylation of primary amine (Preparation of acetanilide).		
	10. Base catalyzed Aldol Condensation (Synthesis of dibenzal propanone).		
Teaching	Plan for Theory (Second Semester) Class: BSc Part I	T4	T4
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Unit IV & Unit-VI	31	Ctilizeu
01	Unit- IV	16	
	Phenols: Methods of formations a) from aniline b) from cumene. Acidic		
A]	character, Reaction of Phenols- a) Carboxylation (Kolb's reaction), b)	07	
111	Fries Rearrangement, c) Claisen Rearrengement and d) Reimer – Tiemann	07	
	reaction.		
B]	Ethers: Diethyl ether- Preparation by Williamson's synthesis and continuous etherification process, Reactions-with cold and hot HI.	04	
~	Epoxides: Synthesis of ethylene oxide from ethylene and styrene oxide	0.4	
C]	from styrene. Ring opening reactions of both catalysed by acid and alkali.	04	
D]	Unit Test	01	
02	Unit-VI- Chemical Kinetics	15	
A]	Explanation of terms like rate of reaction, order of a reaction and molecularity. Definition with one example of zero, first and second order reaction. Half life period of a reaction. Derivation of rate equation for first and second order reaction with equal initial concentration and different initial concentration of a reactant. Characteristics of first and second order reaction. Examples of first and second order reaction and their kinetics study with modified rate equation viz. the reactions (i) decomposition of H_2O_2 , (ii) reaction between $K_2S_2O_8$ and KI, (iii) hydrolysis of methyl acetate catalyzed by acid, (iv) saponification of ethyl acetate by NaOH and (v) inversion of canesugar. Determination of order of a reaction by integration, graphical, equifractional change, vant Hoff's differential method and Ostwald's isolation method. Effect of temperature on reaction rates. Arrhenius equation, activation energy and its determination using Arrhenius equation. Numericals.	14	
B]	Unit Test	01	
Teaching	Plan for Practical (Second Semester) Class : BSc Part I	Lostumas	Lostress
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Exercise I: Organic Qualitative Analysis	42	
	1) Preliminary examinations		
	2) Detection of the elements 3) Detection of functional groups		
	3) Detection of functional groups4) Determination of m.p./ b.p.		
	5) Preparation of derivative and its m.p./ b.p.		
	6) Performance of spot test if any.		

Г			
	1) Acids: Oxalic acid, Benzoic acid, Salicylic acid, Phthalic acid.		
	2) Phenols: Resorcinol, á-naphthol, â-naphthol.		
	3) Aldehydes: Benzaldehyde, Glucose.		
	4) Bases : Aniline, p-Toluidine		
	5) Nitro compounds: m-Dinitrobenzene.		
	6) Amides: Benzamide, Urea, Acetamide.		
	7) Hydrocarbons: Naphthalene, Anthracene.		
	8) Halogen compounds: Chloroform, Chlorobenzene.		
02	Exercise II: Physical Chemistry Experiments	42	
	1) To determine surface tension of a given unknown liquid by		
	Stalagmometer (Density measurement is must).		
	2) To determine coefficient of viscosity of unknown liquid by Ostwald's		
	viscometer (Density measurement is must).		
	3) To compare cleaning power of detergent samples by Stalagmometer.		
	4) To determine parachor value of -CH ₂ - group by Stalagmometer.		
	5) To determine unknown percentage composition of given ethanol-water		
	mixture by viscometer.		
	6) To determine activation energy of a reaction between $K_2S_2O_8$ and KI.		
	7) To determine heat of solution of KNO ₃		
Teaching	Plan for Theory (Third Semester) Class: BSc Part II		
Sr. No.	Topic to be covered	Lectures	Lectures
	Topic to be covered	Available	Utilized
01	Unit II - Theory of Quantitative Inorganic Analysis	12*	
	Volumetric Analysis:		
	(a) Introduction:-Volumetric analysis, titrant, titrate, end point,		
	equivalence point, indicator etc. Requirements of volumetric analysis.		
	Definition of standard solution, primary standard substance. Requirements		
	of primary standard substance. Terms to express concentrations namely-		
	molarity, normality, molality, mole fraction and percentage. (Simple		
	numericals expected).		
	(b) Acid-Base titrations:- Types of acid base titrations. pH variations	08	
A]	during acid base titration. Acid base indicators. Modern theory	00	
	(Quinoniod theory) of acid base indicators. Choice of suitable indicators		
	for different acid base titrations.		
	(c) Redox Titrations:-General principles involved in redox titrations		
	(redox reactions, redox potentials, oxidant, reductant, oxidation number).		
	Brief idea about use of KMnO ₄ , K ₂ Cr ₂ O ₇ as oxidants in acidic medium in		
	redox titrations. Use of I ₂ in iodometry and iodimetry. Redox indicators-		
	external and internal indicators. Use of starch as an indicator. Iodometric		
	estimation of Cu (II).		
	Gravimetric Analysis:		
	Definition. Theoretical principles underlying various steps involved in	04	
B]	gravimetric analysis with reference to estimation of barium as barium	04	
	sulphate. Coprecipitation and post precipitation.(Definition, types and		
	factors affecting).		
<u>C]</u>	Unit Test	01	
Teaching	Plan for Practical (Third Semester) Class: BSc Part II		
Sr. No.	Topic to be covered	Lectures	Lectures
	Topic to be covered	Available	Utilized
01			
	Exercise I: Volumetric Analysis	87	
	1) Prepare 0.1N oxalic acid standard solution and find out the acid	87	
	1) Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate	87	
	1) Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution.	87	
	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using 	87	
	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard 	87	
A)	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution. 	87	
A)	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution. To determine the strength of oxalic acid by titration with KMnO4. 	87	
A)	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution. To determine the strength of oxalic acid by titration with KMnO4. To determine percentage purity of Ferrous Ammonium Sulphate (FAS) 	87	
A)	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution. To determine the strength of oxalic acid by titration with KMnO4. To determine percentage purity of Ferrous Ammonium Sulphate (FAS) by titration with KMnO₄. 	87	
A)	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution. To determine the strength of oxalic acid by titration with KMnO4. To determine percentage purity of Ferrous Ammonium Sulphate (FAS) by titration with KMnO₄. To determine strength of FAS by titration with K₂Cr₂O₇using internal 	87	
A)	 Prepare 0.1N oxalic acid standard solution and find out the acid neutralizing capacity of an antacid using NaOH as an intermediate solution. Prepare 0.1N H₂SO₄ solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as standard solution. To determine the strength of oxalic acid by titration with KMnO4. To determine percentage purity of Ferrous Ammonium Sulphate (FAS) by titration with KMnO₄. 	87	

	indicator.		
	7) Estimation of copper (II) in commercial copper sulphate sample by		
	iodometric titration.		
	Gravimetric Analysis		
B)	Estimation of Ba ²⁺ as BaSO ₄ , Fe ³⁺ as Fe ₂ O ₃ using china and silica crucible		
	and Ni ²⁺ as Ni-DMG using sintered glass crucible		
C)	Exercise-II: Physical Chemistry experiments	87	
	1) To determine refractive index by Abbe's refractometer.	07	
	2) To construct phase diagram of phenol-water system and to determine		
	consolute temperature for the system.		
	3) To determine transition temperature of MnCl ₂ .4H ₂ O.		
	4) To study kinetics of hydrolysis of methyl acetate catalyzed by acid.		
	5) To study kinetics of saponification of ethyl acetate by NaOH. (Equal		
	concentration)		
	6) To determine partition coefficient of benzoic acid between benzene and		
	water.		
	7) To determine partition coefficient of iodine between CCl ₄ /Kerosene and		
	water.		
	8) To determine solubility of benzoic acid at different temperature and		
	heat of solution.		
Teaching	Plan for Theory (Fourth Semester) Class: BSc Part II		
Teaching	Tian for Theory (Fourth Semester) Class. BSC 1 art II	Lectures	Lectures
Sr. No.	Topic to be covered		
0.1		Available	Utilized
01	Unit- I	14	
	Chemistry of elements of transition series:		
	Definition of transition elements. General characteristics of transition		
	elements. Comparative study of first transition series elements (3d) with		
	reference to following properties: (i) Electronic configuration (ii) Atomic		
A]	and ionic size (iii) Ionization energy (iv) Metallic nature (v) Oxidation	10	
Aj	states (vi) Magnetic properties (vii) Color of salts (viii) Catalytic	10	
	properties (ix) Complex formation behavior. Study of 4d and 5d series		
	elements-Electronic configuration. Comparison of 3d series elements with		
	4d and 5d series elements with respect to size, oxidation states, magnetic		
	properties and color.		
	Extraction of elements:		
	Principles involved in extraction of elements. Major methods of extraction		
B]	of elements. Factors affecting choice of extraction method.	03	
D ₁	Thermodynamics of reduction processes-Ellingham diagrams for oxides	03	
	and importance of this diagram (only preliminary ideas).		
	and importance of this diagram (only premimary ideas).		
(1)	TT *4 / FT 4	0.1	
C]	Unit Test	01	
	Unit Test Plan for Practical (Fourth Semester) Class: BSc Part 1	I	_
Teaching	Plan for Practical (Fourth Semester) Class: BSc Part 1	Lectures	Lectures
Teaching Sr. No.	Plan for Practical (Fourth Semester) Class: BSc Part 1 Topic to be covered	Lectures Available	Lectures Utilized
Teaching	Plan for Practical (Fourth Semester) Topic to be covered Exercise I: Inorganic estimations	Lectures	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Class: BSc Part I Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II)	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Topic to be covered Exercise I: Inorganic estimations	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Class: BSc Part I Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II)	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Class: BSc Part I Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values.	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Class: BSc Part 1 Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration.	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Class: BSc Part 1 Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration.	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial	Lectures Available	
Teaching Sr. No.	Plan for Practical (Fourth Semester) Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex.	Lectures Available	
Teaching Sr. No.	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from	Lectures Available	
Teaching Sr. No.	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or	Lectures Available	
Teaching Sr. No. 01	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically.	Lectures Available 93	
Teaching Sr. No.	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals	Lectures Available	
Teaching Sr. No. 01	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk.	Lectures Available 93	
Teaching Sr. No. 01	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves.	Lectures Available 93	
Teaching Sr. No. 01	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffine from tea leaves.	Lectures Available 93	
Teaching Sr. No. 01	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of lycopene from tomato juice.	Lectures Available 93	
Teaching Sr. No. 01	Topic to be covered Exercise I: Inorganic estimations 1) Chromatographic separation of binary mixture containing Cu(II), Co(II) and Ni(II) ions by paper chromatography and determination of Rf values. 2) Estimation of Zn(II) by complexometric titration. 3) To determine the strength of unknown calcium salt solution by complexometric titration. 4) Estimation of hardness of water by complexometric titration. 5) Colorimetric or spectrophotometric estimation of Cu(II) in commercial copper sulphate sample as ammonia complex. 6) To determination of concentration of unknown KMnO ₄ solution from standard solutions of KMnO ₄ by colorimetrically or spectrophotometrically. Exercise II: Organic Chemistry Practicals 1. Isolation of casein from milk. 2. Isolation of nicotine from tobacco leaves. 3. Isolation of caffine from tea leaves.	Lectures Available 93	

Teaching	7. Determination of equivalent weight of an organic acid. Plan for Theory (Fifth Semester) Class: BSc Pa	rt III	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Unit-I & Unit-II	29	
01	Unit-I	15	
A]	Coordination Compounds: Important terms namely molecular or addition compounds, double salts, complex salts, complex ion, ligand, coordination number, central metal ion, etc. Werner's theory of coordination and its experimental verification on the basis of conductance data and formation of AgCl precipitate in case of cobaltammines. Sidgwick's electronic interpretation and its drawbacks, effective atomic number. IUPAC rules for nomenclature of coordination compounds. Structural isomerism-ionization, linkage and coordination in complexes. Geometrical isomerism in octahedral complexes of the type Ma4b2, Ma3b3, Ma2b2c2, Ma4 bc, M(AA)2b2. Square planar complexes of the type Ma2b2 and Ma2bc. Optical isomerism in octahedral complexes of type Ma2b2c2, Mabcdef, M(AA)3, M(AA)2b2 and tetrahedral complexes of the type Mabcd and M(AA)2. Optical isomerism in square planar complexes. Valence bond theory as applied to structure and bonding in complexes of 3d-series elements (Only 4 and 6 coordinates complexes). Inner and outer orbital complexes. Magnetic properties of	11	
B]	complexes of 3d series elements. Limitations of VB theory. Chelates: Definition, classification and applications of chelates in analytical chemistry. Stability of chelate with special reference to chelate effect.	03	
C]	Unit Test	01	
02	Unit II	14	
A]	Crystal Field Theory (CFT): Postulates of CFT, Crystal field splitting in octahedral, distorted octahedral, square planar tetrahedral complexes, concept of CFSE, high spin and low spin complexes on the basis of Ä0 and pairing energy, distribution of electrons in t2g and eg orbitals in high spin and low spin octahedral complexes. Factor affecting magnitude of crystal field splitting in octahedral complexes.	07	
B]	Electronic Spectra of Transition Metal Complexes: Introduction to spectra, selection rules for d-d transitions, spectroscopic terms-determination of ground term symbols for d ¹ to d ¹⁰ , spectra of d ¹ and d ⁹ octahedral complexes, Orgel diagram for d ¹ and d ⁹ states, electronic spectrum of [Ti(H ₂ O) ₆] ³⁺ complex ion. Spectrochemical series. Unit Test	06	
C]		01	
		Lectures	Lectures
Sr. No.	Topic to be covered	Available	Utilized
01	Exercise 1: Inorganic Preparations	87	
	 Preparation of tetraamminecopper(II)sulphate. Preparation of hexaamminenickel(II)chloride. Preparation of potassiumtrioxalate aluminate(III). Preparation of Prussian blue. Preparation of chrome alum. Preparation of sodium thiosulphate and dithionite. (Comment on VB structure, magnetic properties and color of 1, 2 and 3 complexes) 		
02	Exercise II: Physical Chemistry experiments	87	
	 To determine strength of given HCl solution conductometrically. To determine strength of given CH₃COOH solution conductometrically. To determine strength of given HCl solution potentiometrically. To determine strength of HCl and CH₃COOH in a given mixture conductometrically. To determine redox potential of Fe⁺²/Fe⁺³ system potentiometrically. To determine molecular weight by Rast's method. To determine specific rotation of optically active compound by Polarimeter. 		

Teaching	Teaching Plan for Theory(Sixth Semester) Class: BSc Part 1						
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized				
	Unit-III & Unit- IV	31					
01	Unit-III	16					
A]	Electronic spectroscopy: Introduction, theory, instrumentation, types of electronic transitions, presentation of electronic spectrum, terms used- chromophore, auxochrome, bathochromic shift, hypsochromic shift, hyperchromic effect and hypochromic effect, Applications in the structure determination of dienes, á,â-unsaturated aldehydes and ketones, aromatic compounds.	07					
B]	Infrared spectroscopy: Introduction, Types of molecular vibrations- stretching and bending, Calculation of vibrational modes, force constant, instrumentation, interpretation of IR, H-stretching, triple bond, double bond and Finger print regions, IR spectra of H ₂ O, CO ₂ , C ₂ H ₅ OH, CH ₃ CHO, CH ₃ COOH and CH ₃ CONH ₂ .	08					
C]	Unit Test	01					
02	Unit IV	15					
A]	NMR spectroscopy: Introduction, spin quantum number, instrumentation, Aspects of NMR- number of signals(equivalent and non-equivalent protons), positions of signals(chemical shift), intensities of signals, splitting of signals(spin-spin coupling), coupling constant, applications Mass spectroscopy:	08					
B]	Introduction, theory, instrumentation-(ion sources), Mass spectra of neopentane and methanol, molecular ion peak, base peak, metastable peak, Rules of fragmentation, applications.	06					
C]	Unit Test	01					
Teaching	Plan for Practical (Sixth Semester) Class: BSc Pa	art III	•				
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized				
01	Exercise I: Organic Chemistry Experiments	93					
	 Estimation of formaldehyde. Estimation of glycine. Estimation of ascorbic acid (vitamine C). Estimation of phenol by bromination method. Estimation of aniline by bromination method. Estimation of urea by hypobromite method. Estimation of unsaturation by bromination method. Determination of iodine value of oil. Determination of equivalent weight of an ester by saponification. Separation of a mixture of methyl orange and methylene blue by thin layer chromatography (using benzene). Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde and benzaldehyde by thin layer chromatography(using benzene : petroleum ether = 3:1). Separation of a mixture of dyes by thin layer chromatography (using cyclohexane:ethyl acetate = 8.5:1.5). Separation of a mixture of 2,4-dinitro phenyls of acetaldehyde and benzaldehyde by thin layer chromatography (using toluene: petroleum ether). 						
02	Exercise II: Physical Chemistry experiments	93					
	 To determine dissociation constant of weak acid by conductometry. To determine dissociation constant of weak acid by potentiometry. To study potentiometric titration of KCl and AgNO₃. To determine dissociation constant of dibasic acid by pH-metry. To verify Beer's Lambart's law using KMnO₄ /K₂Cr₂O₇. To determine pH of a soil sample by pH-meter. To determine solubility and solubility product of sparingly soluble salts conductometrically. To study strong acid and strong base titration by pH-metry. Distribution of Marks for Practical Examination 						

ACADEMIC ACTION PLAN 2021-2022

Department of Chemistry

01	Name of the	Department Department	Department of Chemistry
02	Name of fact	ulty members with qualification	N.D.Dahake (M.Sc., SET, PhDReg.), Dr. V. D. Ingale (M.Sc., PhD) K.P. Sabale (M.Sc., NET, PhD Reg.) N.S. Shelke (M.Sc., SET, PhDReg.)
03		ourse/ Orientation Program/ Short / Any Others	04
		i) Book Publication	02
		ii) Chapter in Book	04
		iii) Research Articles in UGC CARE listed Journal	04
		iv) Research Paper in conference/ seminar (Presentation)	04
		v) Research Paper in conference/ seminar proceeding (Publication)	04
	Research	vi) Conference/ Seminar/ Workshop (To be attended)	04
	Publication	vii) Resource Person/ Chairperson	04
04		viii) Ph. D registered/Ongoing/Awarded	NIL
		xv) Ph. D guide and no. of students registered /to be registered under	NIL
		xvi) Minor/ Major Project	01
05	Conference/organized)	Seminar/ Workshop (To be	02
06	Collaboration	1	02
07	Consultancy		02
08	Extension Ac	ctivities and Social Responsibility	02

09	Academic Activities to be organized (Guest lecture, class room seminar, contest, education tour, celebration of birth and death anniversary of national leaders, no. of visiting & guest faculties etc.)	01 Each	
10	Innovative and Best Practices Best Practice should have:- Name of the title of the practice. Introduction Objectives Theme/context The practice Evidence of success Problems encountered and resources required	1.TDS measurement of water of nearby villages 2.PH measurement of nearby fields.	
11	Any other if you wish to add	NIL	
12	Curriculum Enrichment (Draft the letter to the concerned BoS of University)	NIL	
13	Student Enrolment & Profile		



SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA

DEPARTMENT OF BOTANY

DEPRTMENTAL ACADEMIC CALENDAR 2021-22

Academic Calendar (2021-22)

Sr. No.	Activity	Commencement	Cessation	Total Days
01	First Session	30/08/2021	15/01/2022	105
02	Admission Process	01/09/2021	18/09/2021	14
03	Teaching Days (Odd Semesters)	27/09/2021	15/01/2022	83
04	Induction Program for First Year Students	20/09/2021	25/09/2021	06
05	First Term Vacation	01/11/2021	06/11/2021	06
06	Odd Semesters University Exam	17/01/2022	05/02/2022	19
07	Second Session	17/01/2022	31/05/2022	109
08	Teaching Days (Even Semesters)	07/02/2022	31/05/2022	90
09	Second Term Vacation	01/06/2022	30/06/2022	26
10	Even Semesters University Exam	01/06/2022	30/06/2022	30
11	Commencement of next Academic session 2022-23	01/07/2022		

Sr. No.	Public Holiday	Day & Date
01	Ganesh Chaturthi	Friday, 10th September, 2021
02	Gauri Pujan	Monday, 13th September, 2021
03	Mahatma Gandhi Jayanti	Saturday, 02 October, 2021
04	Sarvapitri Amavasya	Wednesday, 6th October 2021
05	Dasara	Friday, 15 th October 2021
06	Id E- Milad	Tuesday, 19th October, 2021
07	Gurunanak Jayanti	Friday, 19 th November, 2021
08	Christmas	Saturday, 25 December, 2021
09	Makar Sankranti	Friday, 14 th January, 2022
10	Republic Day	Wednesday, 26 January, 2022
11	Chhatrapati Shivaji Maharaj Jayanti	Saturday, 19 February, 2022
12	Mahashivratri	Tuesday, 1st March, 2022
13	Holi (Second Day)	Friday, 18th March, 2022
14	Gudhi Padwa	Saturday, 02 nd April, 2022
15	Dr. Babasaheb Ambedkar Jayanti	Thursday, 14th April, 2022
16	Good Friday	Friday, 15 th April, 2022

Time Table:

Name: Mr. S. S. Mhasal

Faculty: SCIENCE Subject: BOTANY

Period	1	2	3	4	5	6
	Practical	Theory				Practical
Day/	8:30 to 10:54	11:00 to	11:48 to	12:36 to	1:34 to 2:22	2:30 to 4:54
Time		11:48	12:36	1:24		
MON			III (T)			I (Pract.)
						Batch:(C+D)
TUE	I (Pract.)					
	Batch:(A+B)					
WED						II (Pract.)
						Batch:(C+D+E)
THUS	II (Pract.)		I(T)			
	Batch:(A+B)					
FRI		I(T)				III (Pract.)
						Batch:(C+D+E)
		7:30 -	8:18 -	9:16 -	10:04-12:28	12:28 -2:52
		8:18	9:06	10:04		2.30-4.54
SAT			I(T)			III (Pract.)
						Batch:(C+D+E)

Allotted Workload

Subject: BOTANY Year: 2021-22

Sr. No.	Class	Work load					
		Lecture (Theory)	Practical	Paper Allotted			
1	BSc I	03	$2 \times 3 = 06$	1			
2	BSc. – II		$2 \times 3 = 06$	-			
3	BSc III	01	$2 \times 3 = 06$	1			

Total Workload per week 04 THEORY + 06 PRACTICALS (17 Hrs. 36 min.)

Teaching Periods Available per month during the session 2021-22

Faculty: SCIENCE Subject: BOTANY

ODD SEMESTER						EVEN SEMESTER						
Class	Periods	SEP - 202 1	OCT - 2021	NOV -2021	DEC -2021	JAN - 2022	Tota l	FEB- 2022	MAR- 2022	APR - 2022	MAY- 2022	Total
DC. I	Theory	01	12	08	13	09	43	11	12	11	12	46
BSc-I	Practical	06	21	24	24	18	93	24	24	24	24	96
BSc –	Theory											
II	Practical	06	24	18	30	18	96	24	30	18	24	96
BSc-	Theory	01	04	04	04	03	16	04	04	04	04	16
III	Practical	-	24	15	24	18	81	21	21	24	24	90

Teach	ning Plan for Theory (First Semester) Class	: BSc. Part I	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit-IV: Bryophyte	13	September 2021 to October 2021
02	Unit-V: Pteridophyte	15	November 2021 to December 2021
03	Unit-VI : Application of Microbes Cryptogams	15	December 2021 to January 2022
Teach	ning Plan for Practical (First Semester) Clas	ss : BSc. Part	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	ALGAE	27	September 2021 to October 2021
02	FUNGI AND PLANT PATHOLOGY	24	November2021
03	BRYOPHYTES	24	December 2021
04	PTERIDOPHYTES	18	January 2022
Teach	ning Plan for Theory (Second Semester) Class: BSc.	[
Sr. No.	Topic to be covered	Lectures Available	Duration
01	UNIT-IV: Morphology	15	February 2022 to March 2022
02	UNIT-V: Morphology and Utilization of Plants	14	March 2022 April 2022
03	UNIT-VI: Utilization of Plants	14	April 2022 to May 2022
Teach	ning Plan for Practical (Second Semester) Cla	ss : BSc. I	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Gymnosperms: Morphology and anatomy of the following members-Pinus.	09	February 2022
02	Gymnosperms: Morphology and anatomy of the following members Gnetum	06	February 2022
03	Preparation of double stained permanent mount of Pinus stem, needle.	09	February 2022
04	Preparation of double stained permanent mount of Gnetum stem and leaf.	09	March 2022

			1
05	Detailed morphological study of types of root with its modifications.	09	March 2022
06	Detailed morphological study of types of stem with its modifications.	06	March 2022
07	Detailed morphological study of types of leaf with its modifications.	09	April 2022
08	Study of Forms of corolla.	09	April 2022
09	Study of Types of placentation.	06	April 2022
10	Study of Morphology of fruits.	09	May 2022
11	Morphology of plant parts used and medicinal plants prescribed in syllabi	09	May 2022
12	Utilization of plants: Spices, fiber yielding plants and food plants prescribed in syllabi.	06	May 2022
Teacl		: BSc. II	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Embryology of Angiosperms: Observation of wide range of flowers available in the locality and methods of their pollination.	06	September 2021
02	Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .	06	October 2021
03	Mounting of T.S. of anthers, Pollen grains and pollinia.	12	October 2021
04	Anatomy of angiosperms : Preparation of double stained slides of root. (Dicot. & Monocot.)	06	October 2021
05	Anatomy of angiosperms : Preparation of double stained slides of stem. (Dicot. & Monocot.)	06	November 2021
06	Anatomy of angiosperms : Preparation of double stained slides of leaf. (Dicot. & Monocot.)	06	November 2021
07	Taxonomic description of family, Verbanaceae – <i>Lantana</i> .	06	November 2021
08	Taxonomic description of family, Malvaceae - <i>Hibiscus</i> .	06	December 2021
09	Taxonomic description of family, Fabaceae -Crotalaria.	06	December 2021
10	Taxonomic description of family, Caesalpinoidae - <i>Caesalpinea</i> .	06	December 2021
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021
12	Taxonomic description of family, Apiaceae - <i>Corindrum</i> .	06	December 2021
13	Taxonomic description of family, Apocynaceae -Vinca.	03	January 2022
14	Taxonomic description of family, Asclepiadaceae -Calatropis.	03	January 2022
15	Taxonomic description of family, Solanaceae - <i>Datura</i> .	03	January 2022
16	Taxonomic description of family, Lamiaceae-	03	January 2022

	Oscimum.		
17	Group discussion, record book checking, certification	03	January 2022
	ning Plan for Practical (Fourth Semester) Class	s : BSc. II	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Squash preparation for the study of various stages of mitosis	12	February 2022
02	Smear preparation for the study of various stages of meiosis.	12	February 2022
03	To prove Mendel's Monohybrid ratio.	06	March 2022
04	To prove Mendel's Dihybrid ratio.	06	March 2022
05	Problems based on Interaction of genes	18	March 2022
06	To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root.	12	April 2022
07	To demonstrate test for protein.	06	April 2022
08	To demonstrate the lipid test in oily seeds.	06	May 2022
09	To demonstrate the test for starch / cellulose.	06	May 2022
10	To demonstrate the activity of enzyme amylase from germinating Wheat grains.	12	May 2022
Teach	ning Plan for Theory (Fifth Semester)	lass : BSc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Plant Water Relations	19	September 2021 to January 2022
Teach	ning Plan for Practical (Fifth Semester) Cla	ass : BSc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	03	October 2021
02	To determine the path of water (ascent of sap)	06	October 2021
03	To determine the rate of transpiration by Ganongs photometer.	06	October 2021
04	To determine rate of photosynthesis under varying quality of light and CO2 concentration.	03	October 2021
05	Separation of chloroplast pigments by paper chromatography method.	06	October 2021
06	To study antagonism of salts.	09	November 2021
07	To study effect of IAA and Gibberellins on seed germination.	03	November 2021
08	To demonstrate exo and endosmosis.	03	November 2021
09	To demonstrate fermentation.	03	December 2021
10	To demonstrate transpiration by Bell jar.	03	December 2021
11	To demonstrate anaerobic respiration in germinating seeds.	03	December 2021
12	To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i>	03	December 2021
13	Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> .	06	December 2021
14	Study of morphological and anatomical adaptations in xerophytes - <i>Nerium, Casuarina</i> .	06	December 2021

15	Determination of pH of different soils and water samples by pH papers	09	January 2022
16	Study of meteorological instruments -Rain gauge, Hygrometer.	09	January 2022
Teacl	hing Plan for Theory(Sixth Semester) Class	s : BSc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit-I : DNA the genetic material :	16	February 2022 to May 2022
Teacl	hing Plan for Practical (Sixth Semester)	lass : BSc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Isolation of DNA by crude method	18	February 2022
02	Demonstration of Centrifugation	03	February 2022
03	Working Principle and application of Autoclave	12	March 2022
04	Working Principle and application of Laminar Air Flow	09	March 2022
05	Cleaning and Sterilization of Glassware	12	April 2022
06	Demonstration of technique of Micropropogation	12	April 2022
07	Preparation of Artificial Seed.	09	May 2022
08	Pollen viability test.	09	May 2022
09	Group discussion, record book checking, certification	06	May 2022

Time Table:

Name: Dr. Kishor B. Theng

Faculty: SCIENCE Subject: BOTANY

Period	1	2	3	4	5	6
	Practical	Theory				Practical
Day/	8:30 to 10:54	11:00 to	11:48 to	12:36 to	1:34 to 2:22	2:30 to 4:54
Time		11:48	12:36	1:24		
MON	I (Pract.) Batch:(A+B)		I (T)			
TUE		I(T)				I (Pract.) Batch:(C+D)
WED	II (Pract.) Batch:(A+B)	I (T)				
THUS		III(T)				II (Pract.) Batch:(C+D+E)
FRI	III (Pract.) Batch:(A+B)			III(T)		I (Pract) A -2
		7:30 -	8:18 - 9:06	9:16 - 10:04	10:04-12:28	12:28 -2:52
		8:18				2.30-4.54
SAT						III (Pract.)
						Batch:(C+D+E)

Allotted Workload

Subject: BOTANY Year: 2021-22

Sr. No.	Class	Work load			
		Lecture (Theory)	Paper Allotted		
1	BSc I	03	$2 \times 3 = 06$	1	
2	BSc. – II		$2 \times 3 = 06$	-	
3	BSc III	02	$2 \times 3 = 06$	1	

Total Workload per week (Th +Pract.): 05 (The) + 18 (Pract.) = 23 (18 Hrs. 15min.)

Teaching Periods Available per month during the session 2021-22

Faculty: SCIENCE Subject: BOTANY

	Tuculty: Sellitel							Subject. Bolling				
		ODD SEMESTER					EVEN SEMESTER					
Class	Periods	SEP- 2021	OCT -2021	NOV- 2021	DEC - 2021	JAN - 2022	Total	FEB- 2022	MAR- 2022	APR - 2022	MAY- 2022	Total
BSc-I	Theory	03	10	11	13	06	43	10	13	12	12	47
BSC-1	Practical	06	21	24	27	12	90	21	24	24	24	93
BSc –II	Theory	1		1		1		1		1	1	
DSC -II	Practical	06	21	18	30	12	87	18	30	21	24	93
BSc- III	Theory	01	08	05	10	03	27	06	08	07	08	29
DSC- III	Practical	06	24	15	24	09	78	15	21	24	24	84

Tooobis	ag Dlan for Theory (First Comester)		Class : BSc. Part I
Teachii	ng Plan for Theory (First Semester)	T .	Class: BSc. Part I
Sr. No.	Topic to be covered	Lectures	Duration
	•	Available	
01	UNIT-I: Plant Diversity	14	September 2021 to November 21
02	UNIT-II: Algae	14	November 2021 to December 2021
03	UNIT-III : Fungi	15	December 2021 to January 2022
Teachi	ng Plan for Practical (First Semester)		Class : BSc. Part I
Sr. No.	Tania ta ba assanad	Lectures	Duration
Sr. No.	Topic to be covered	Available	Duration
	ALGAE :-		September 2021
0.1	Preparation of temporary mount, identification	0.6	
01	with reason of following algal materials-	06	
	Oedogonium, Hydrodictyon		
0.2	Preparation of temporary mount, identification	06	October 2021
02	with reason of following algal materials- Chara		
	Preparation of temporary mount, identification	03	October 2021
03	with reason of following algal materials-		
0.5	Vaucheria		
	7 400-11-11-11-11-11-11-11-11-11-11-11-11-1	03	October 2021
0.4	Preparation of temporary mount, identification	03	October 2021
04	with reason of following algal materials-		
	Ectocarpus		
	Preparation of temporary mount, identification	06	October 2021
05	with reason of following algal materials-		
	Sargassum		
	Preparation of temporary mount, identification	06	October 2021
06	with reason of following algal materials-		
	Batrachospermum		
07	FUNGI AND PLANT PATHOLOGY	06	November 2021

	T		
	Study of genus Albugo&Uncinula		
08	Study of genus Penicillium&Agaricus	06	November 2021
09	Study of genus Puccinia&Cercospora	06	November 2021
10	Study of Crustose, Fruticose& Foliose Liche	06	November 2021
11	Study of symptoms of fungal, viral, bacterial and Mycoplasmal diseases	06	December 2021
12	Collection of fungal specimen & infected plant part from local region	06	December 2021
13	Demonstration of Mushroom Cultivation Technology	03	December 2021
	BRYOPHYTES	03	December 2021
14	Study of external and anatomy features of		Beechieur 2021
14	vegetative and reproductive parts of genera –		
	Marchantia, Anthoceros		
15	Study of external and anatomy features of vegetative and reproductive parts of genera Funaria, Polytrichum and Sphagnum.	06	December 2021 & January 2022
	PTERIDOPHYTES	03	January 2022
16	Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera –Lycopodium& Equisetum	00	·
	Study of Pteridophyte external and anatomy	03	January 2022
17	features of vegetative and reproductive parts of		
	genera – Osmunda&Selaginella		
	Study of Pteridophyte external and anatomy	03	February 2022
18	features of vegetative and reproductive parts of		
	genera – Adiantum&Marsilea		
19	Study of fossil specimen.	03	February 2022
Teachin	g Plan for Theory (Second Semester)		Class: BSc. I
Sr. No.	Topic to be covered	Lectures Available	Duration
01	UNIT-I: Palaeobotany	Available 15	February 2022 to March 2022
	UNIT-I : Palaeobotany UNIT-II : Gymnosperms	Available	
01	UNIT-I: Palaeobotany	Available 15	February 2022 to March 2022
01 02	UNIT-I : Palaeobotany UNIT-II : Gymnosperms	Available 15 15 17	February 2022 to March 2022 March 2022 to April 2022
01 02	UNIT-I: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se	Available 15 15 17	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022
01 02 03	UNIT-I: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se	Available 15 15 17 mester) Lectures	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I
01 02 03 Sr. No.	UNIT-I: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the	Available 15 17 mester) Lectures Available	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration
01 02 03 Sr. No.	UNIT-II: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum Preparation of double stained permanent mount	Available 15 17 mester) Lectures Available 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022
01 02 03 Sr. No. 01	UNIT-I: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum	Available 15 15 17 mester) Lectures Available 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022
01 02 03 Sr. No. 01 02	UNIT-I: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum Preparation of double stained permanent mount of Pinus stem, needle. Preparation of double stained permanent mount	Available 15 17 mester) Lectures Available 09 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022 February and March 2022
01 02 03 Sr. No. 01 02 03	UNIT-II: Palaeobotany UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum Preparation of double stained permanent mount of Pinus stem, needle. Preparation of double stained permanent mount of Gnetum stem and leaf. Detailed morphological study of types of root	Available 15 17 mester) Lectures Available 09 09 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022 February and March 2022 March 2022
01 02 03 Sr. No. 01 02 03 04	UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum Preparation of double stained permanent mount of Pinus stem, needle. Preparation of double stained permanent mount of Gnetum stem and leaf. Detailed morphological study of types of root with its modifications. Detailed morphological study of types of stem	Available 15 17 mester) Lectures Available 09 09 09 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022 February and March 2022 March 2022 March 2022
01 02 03 Sr. No. 01 02 03 04 05	UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum Preparation of double stained permanent mount of Pinus stem, needle. Preparation of double stained permanent mount of Gnetum stem and leaf. Detailed morphological study of types of root with its modifications. Detailed morphological study of types of stem with its modifications. Detailed morphological study of types of leaf	Available 15 17 mester) Lectures Available 09 09 09 09 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022 February and March 2022 March 2022 March 2022 April 2022
01 02 03 Sr. No. 01 02 03 04 05 06	UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Second	Available 15 17 mester) Lectures Available 09 09 09 09 09 09 09	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022 February and March 2022 March 2022 March 2022 April 2022 April 2022
01 02 03 Sr. No. 01 02 03 04 05 06 07	UNIT-II: Gymnosperms UNIT-III: Morphology Teaching Plan for Practical (Second Se Topic to be covered Gymnosperms: Morphology and anatomy of the -Pinus. Gymnosperms: Morphology and anatomy of the Gnetum Preparation of double stained permanent mount of Pinus stem, needle. Preparation of double stained permanent mount of Gnetum stem and leaf. Detailed morphological study of types of root with its modifications. Detailed morphological study of types of stem with its modifications. Detailed morphological study of types of leaf with its modifications. Study of Forms of corolla.	Available 15 17 mester) Lectures Available 09 09 09 09 09 09 09 09 06 06	February 2022 to March 2022 March 2022 to April 2022 April 2022 to May 2022 Class: BSc. I Duration February 2022 February 2022 February and March 2022 March 2022 March 2022 April 2022 April 2022 April 2022

	Morphology of plant parts used and medicinal	06	
11	plants prescribed in syllabi	00	May 2022
12	Utilization of plants: Spices, fiber yielding plants and food plants prescribed in syllabi.	06	May 2022
13	Record checking, certification & group discussion	03	May 2022
	Teaching Plan for Practical (Third Sen	nester)	Class : BSc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Embryology of Angiosperms: Observation of wide range of flowers available in the locality and methods of their pollination.	06	September 2021
02	Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .	06	October 2021
03	Mounting of T.S. of anthers, Pollen grains and pollinia.	06	October 2021
04	Anatomy of angiosperms : Preparation of double stained slides of root. (Dicot. & Monocot.)	06	October 2021
05	Anatomy of angiosperms: Preparation of double stained slides of stem. (Dicot. & Monocot.)	06	October, November 2021
06	Anatomy of angiosperms : Preparation of double stained slides of leaf. (Dicot. & Monocot.)	06	November 2021
07	Taxonomic description of family, Verbanaceae – <i>Lantana</i> .	06	November 2021
08	Taxonomic description of family, Malvaceae -Hibiscus.	06	November, December 2021
09	Taxonomic description of family, Fabaceae - <i>Crotalaria</i> .	06	December 2021
10	Taxonomic description of family, Caesalpinoidae- Caesalpinea.	06	December 2021
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021
12	Taxonomic description of family, Apiaceae -Corindrum.	06	December 2021
13	Taxonomic description of family, Apocynaceae - <i>Vinca</i> .	03	December 2021
14	Taxonomic description of family, Asclepiadaceae -Calatropis.	03	January 2022
15	Taxonomic description of family, Solanaceae - <i>Datura</i> .	03	January 2022
16	Taxonomic description of family, Lamiaceae -Oscimum.	03	January 2022
17	Record checking, certification & group discussion	03	January 2022
	Teaching Plan for Practical (Fourth Se		Class : BSc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Squash preparation for the study of various stages of mitosis	12	February 2022
02	Smear preparation for the study of various stages of meiosis.	12	February, March 2022
03	To prove Mendel's Monohybrid ratio.	06	March 2022

	T M 1 12 . D'1-1 . '1 4'		
04	To prove Mendel's Dihybrid ratio.	06	March 2022
05	Problems based on Interaction of genes	30	March, April 2022
06	To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root.	06	April, May 2022
07	To demonstrate test for protein.	06	May 2022
08	To demonstrate the lipid test in oily seeds.	06	May 2022
09	To demonstrate the test for starch / cellulose.	06	May 2022
10	To demonstrate the activity of enzyme amylase from germinating Wheat grains.	03	May 2022
Teach	ing Plan for Theory (Fifth Semester)		Class : BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit - II: Metabolism-	14	September 2021 to November 2021
02	Unit - III: Metabolism and growth	13	December 2021 to January 2022
Teachi	ng Plan for Practical (Fifth Semester)		Class : BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	06	September 2021
02	To determine the path of water (ascent of sap)	06	October 2021
03	To determine the rate of transpiration by Ganongs photometer.	06	October 2021
04	To determine rate of photosynthesis under varying quality of light and CO2 concentration.	06	October 2021
05	Separation of chloroplast pigments by paper chromatography method.	06	October 2021
06	To study antagonism of salts.	03	November2021
07	To study effect of IAA and Gibberellins on seed germination.	03	November2021
08	To demonstrate exo and endosmosis.	03	November2021
09	To demonstrate fermentation.	03	November2021
10	To demonstrate transpiration by Bell jar.	03	November2021
11	To demonstrate anaerobic respiration in germinating seeds.	03	December 2021
12	To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i>	06	December 2021
13	Study of morphological and anatomical adaptations in hydrophytes – HydrillaandNymphaea.	06	December 2021
14	Study of morphological and anatomical	06	December 2021
15	adaptations in xerophytes <i>–Nerium, Casuarina</i> . Determination of pH of different soils and water samples by pH papers	06	December, January 2022
16	Study of meteorological instruments –Rain gauge, Hygrometer.	03	January 2022
17	Record checking, certification & group	03	January 2022

	discussion		
Teachi	ng Plan for Theory (Sixth Semester)		Class : BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit-II: Gene Structure and Expression - Concept of gene, Fine structure of Gene.	14	February 2022 to March 2022
02	Unit-VI : Applications of Biotechnology	15	April 2022 to May 2022
Teachi	ng Plan for Practical (Sixth Semester)		Class : BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Isolation of DNA by crude method	12	February 2022
02	Demonstration of Centrifugation	06	February, March 2022
03	Working Principle and application of Autoclave	12	March 2022
04	Working Principle and application of Laminar Air Flow	12	March, April 2022
05	Cleaning and Sterilization of Glassware	12	April 2022
06	Demonstration of technique of Micropropogation	06	April 2022
07	Preparation of Artificial Seed.	12	May 2022
08	Pollen viability test.	12	May 2022

Time Table

Stream: Science Subject : Botany

Name of Faculty: **Dr. Dnyaneshwar K. Sherkar**

Period	1	2	3	4	5
Day / Time	08:30am- 10:54am	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	02:30pm- 04:54pm
MON	I (P)			II (T)	I (P)
TUE			II (T)		
WED		II (T)			II (P)
THUS	II (P)				
FRI					III (P)
Day / Time	07:30am- 08:28am	08:28 am to 09:16am	09:16 am to 10:04am		11:40am- 02:04pm
SAT			III (T)		III (P)

Allotted Workload

Subject :Botany Year : 2021-22

Sr. No.	Class	No. of period	Paper Allotted	
		Lectures	Practical	
1	BSc. I	00	06	
2	BSc. II	03 06		01
3	BSc. III	01	06	01

Total Workload per week (L+P) :- 04 (L)+ 18 (P) = 22 (17 hrs. 36 min.)

Teaching Periods Available per month during the session 2021-22

Stream: Science Subject: Botany

	Subject Estaily											
			ODD SEMESTER					EVEN SEMESTER				
Class	Periods	SEP T-21	OCT -21	NOV -21	DEC -21	JAN- 22	Total	FEB- 22	MAR -22	APR -22	MA Y-22	Total
BSc I	Theory	00	00	00	00	00	00	00	00	00	00	00
БЗСТ	Practical	06	24	24	24	18	96	24	24	24	24	96
BSc	Theory	03	10	11	13	09	46	10	13	12	12	47
II	Practical	06	21	18	30	18	93	18	30	21	24	93
BSc III	Theory	00	04	03	03	04	14	02	04	04	04	14
	Practical	00	24	15	24	18	81	15	21	24	24	84

	Teaching Plan for Practical (First Semester)		Class : BSc. Part I
Sr. No.	Topic to be covered	Lectures Available	Duration
01	ALGAE:- Preparation of temporary mount, identification with reason of following algal materials-Oedogonium, Hydrodictyon.	12	September 2021
02	Preparation of temporary mount, identification with reason of following algal materials- Vaucheria.	06	October 2021
03	Preparation of temporary mount, identification with reason of following algal materials- Sargassum.	12	October 2021
04	FUNGI AND PLANT PATHOLOGY Study of genus Albugo & Uncinula.	12	November 2021
05	Study of genus Puccinia & Cercospora.	12	November2021
06	Study of symptoms of fungal, viral, bacterial and Mycoplasmal diseases.	12	December 2021
07	Demonstration of Mushroom Cultivation Technology.	06	December 2021
08	BRYOPHYTES Study of external and anatomy features of vegetative and reproductive parts of genera Funaria, Polytrichum and Sphagnum.	12	January 2022
09	PTERIDOPHYTES Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera —	06	January 2022

	Osmunda&Selaginella.		
10	Study of fossil specimen.	06	February 2022
	Teaching Plan for Practical (Second Semester)	C	lass : BSc. I
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Gymnosperms: Morphology and anatomy of the -Pinus.	18	February 2022
02	Preparation of double stained permanent mount of Pinus stem, needle.	18	March 2022
03	Detailed morphological study of types of root with its modifications.	18	March 2022
04	Detailed morphological study of types of leaf with its modifications.	12	April 2022
05	Study of Types of placentation.	12	April-May 2022
06	Morphology of plant parts used and medicinal plants prescribed in syllabi	12	May 2022
07	Record Book checking	06	May 2022
	Teaching Plan for Theory (Third Semester)		Class : BSc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	UNIT IV: Anatomy	16	September- October 2021
02	UNIT V: Anatomy	15	October-November2021
03	UNIT VI : Embryology-	15	December 2021 to January 2022
	Teaching Plan for Practical (Third Semester)	Cla	ss : BSc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Embryology of Angiosperms: Observation of wide range of flowers available in the locality and methods of their pollination.	06	September 2021
02	Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .	06	October 2021
03	Mounting of T.S. of anthers, Pollen grains and pollinia.	06	October 2021
04	Anatomy of angiosperms: Preparation of double stained slides of root. (Dicot. & Monocot.)	06	October 2021
05	Anatomy of angiosperms : Preparation of double stained slides of stem. (Dicot. & Monocot.)	06	October- November 2021
06	Anatomy of angiosperms: Preparation of double stained slides of leaf. (Dicot. & Monocot.)	06	November 2021
07	Taxonomic description of family, Verbanaceae – <i>Lantana</i> .	06	November 2021
08	Taxonomic description of family, Malvaceae- Hibiscus.	06	November- December 2021
09	Taxonomic description of family, Fabaceae- Crotalaria.	06	December 2021
10	Taxonomic description of family, Caesalpinoidae- Caesalpinea.	06	December 2021
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021
12	Taxonomic description of family, Apiaceae - Corindrum.	06	December 2021
13	Taxonomic description of family, Apocynaceae-Vinca.	03	December 2021
14	Taxonomic description of family, Asclepiadaceae - Calatropis.	03	January 2022
15	Taxonomic description of family, Solanaceae - Datura.	03	January 2022
16	Taxonomic description of family, Lamiaceae-Oscimum.	03	January 2022
17.	Practical record checking, certification, group discussion	03	January 2022
	Teaching Plan for Theory (Fourth Semester)		ss : BSc. II
Sr.	Topic to be covered	Lectures	Duration

No.		Available	
01	Unit-IV: Genetics	17	February-March 2022
02	Unit – V Genetics	15	March-April 2022
03	Unit – VI Biochemistry	15	April-May 2022
	Teaching Plan for Practical (Fourth Semester)		ss : BSc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Squash preparation for the study of various stages of mitosis	12	February 2022
02	Smear preparation for the study of various stages of meiosis.	12	February-March 2022
03	To prove Mendel's Monohybrid ratio.	06	March 2022
04	To prove Mendel's Dihybrid ratio.	06	March 2022
05	Problems based on Interaction of genes	30	March- April 2022
06	To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root.	06	April 2022
07	To demonstrate test for protein.	06	May 2022
08	To demonstrate the lipid test in oily seeds.	06	May 2022
09	To demonstrate the test for starch / cellulose.	06	May 2022
10	To demonstrate the activity of enzyme amylase from germinating Wheat grains.	03	May 2022
	Teaching Plan for Theory (Fifth Semester)		Class : BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit – IV: Plant responses	14	October, November, December-2021, January- 2022
	Teaching Plan for Practical (Fifth Semester)		Class : BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	06	September 2021
02	To determine the path of water (ascent of sap).	06	October 2021
03	To determine the rate of transpiration by Ganongs photometer.	06	October 2021
04	To determine rate of photosynthesis under varying quality of light and CO2 concentration.	06	October 2021
05	Separation of chloroplast pigments by paper chromatography method.	06	October 2021
06	To study antagonism of salts.	03	November2021
07	To study effect of IAA and Gibberellins on seed germination.	06	November2021
08	To demonstrate exo and endosmosis.	03	November2021
09	To demonstrate fermentation.	03	November2021
10	To demonstrate transpiration by Bell jar.	03	November2021
11	To demonstrate anaerobic respiration in germinating seeds.	03	December 2021
12	To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i>	06	December 2021
13	Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> .	06	December 2021
14	Study of morphological and anatomical adaptations in xerophytes - <i>Nerium, Casuarina</i> .	06	December 2021
15	Determination of pH of different soils and water samples by pH papers	06	December 2021 to January 2022
16	Study of meteorological instruments -Rain gauge,	03	January 2022

	Hygrometer.		
17	Practical record checking, certification, group discussion	03	January 2022
	Teaching Plan for Theory(Sixth Semester)		Class : BSc. III
Sr. No.	Tonic to be covered		Duration
01	Unit-IV : Genetic Engineering -	14	February to May- 2022
	Teaching Plan for Practical (Sixth Semester	r) Class:	BSc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Isolation of DNA by crude method	12	February 2022
02	Demonstration of Centrifugation	06	February-March 2022
03	Working Principle and application of Autoclave	12	March 2022
04	Working Principle and application of Laminar Air Flow	12	March- April 2022
05	Cleaning and Sterilization of Glassware	12	April 2022
06	Demonstration of technique of Micropropogation	06	April 2022
07	Preparation of Artificial Seed.	12	May 2022
08	Pollen viability test.	12	May 2022

Time Table:

Name: Dr. N. K. More

Faculty: SCIENCE Subject: BOTANY

Period	1	2	3	4	5
	Practical		Theory	1	Practical
Day/ Time	8:30 to 10:54	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	2:30 to 4:54
MON					I (Pract.) Batch:(C+D)
TUE	I (Pract.) Batch:(A+B)			III (T)	
WED				III (T)	II (Pract.) Batch:(C+D+E)
THUS	II (Pract.) Batch:(A+B)			II (T)	
FRI			II (T)		III (Pract.) Batch:(C+D+E)
		7:30 - 8:18	8:18 - 9:06	9:16 - 10:04	12:28 -2:52 2.30-4.54
SAT		II (T)			III (Pract.) Batch:(C+D+E)

Allotted Workload

Subject: BOTANY Year: 2021-22

Sr. No.	Class	Work load				
		Lecture (Theory)	Practical	Paper Allotted		
1	BSc I		$2 \times 3 = 06$	-		
2	BSc. – II	03	$2 \times 3 = 06$	1		
3	BSc III	02	$2 \times 3 = 06$	1		

Total Workload per week (Theory +Practical): 05 (Theory) + 18 (Practical) = 23 (18 Hrs. 15min.)

Teaching Periods Available per month during the session 2021-22 Faculty: SCIENCE Subject: BOT

Subject: BOTANY

			ODD SEMESTER					EVEN SEMESTER				
Class	Periods	SEP- 2021	OCT -2021	NOV- 2021	DEC - 2021	JAN - 2022	Total	FEB- 2022	MAR- 2022	APR - 2022	MAY- 2022	Total
DG I	Theory						-					
BSc-I	Practical	06	21	24	24	18	93	24	24	24	24	96
BSc –II	Theory	01	11	08	13	12	45	11	12	11	12	46
BSC -II	Practical	06	24	18	30	18	96	24	30	18	24	96
BSc- III	Theory	02	06	07	09	07	31	08	09	08	08	33
	Practical		24	15	24	18	81	21	21	24	24	90

Teach	ing Plan for	Theory (Third Semester)	C	lass : BSc. Part II
Sr. No.		Topic to be covered	Lectures Available	Duration
01	Biodiversi		12	September 2021 to October 21
02	UNIT-II:	Angiosperm Systematics	16	November 2021 to December 2021
03	UNIT-III	: Angiosperm Systematics	17	December 2021 to January 2022
Teachi	ng Plan for	Practical (First Semester)		Class: BSc. Part I
Sr. No.		Topic to be covered	Lectures Available	Duration
	ALGAE:-			
01	i) ii) iii) iv) v) vi)	Preparation of temporary mount, identification with reason of following algal materials-Oedogonium, Hydrodictyon Preparation of temporary mount, identification with reason of following algal materials- Chara Preparation of temporary mount, identification with reason of following algal materials- Vaucheria Preparation of temporary mount, identification with reason of following algal materials-Ectocarpus Preparation of temporary mount, identification with reason of following algal materials-Ectocarpus Preparation of temporary mount, identification with reason of following algal materials-Sargassum Preparation of temporary mount, identification with reason of following algal materials-Batrachospermum	27	September- October 2021

	FUNCIA	ND PLANT PATHOLOGY		
	vii)	Study of genus Albugo & Uncinula		
	viii)	Study of genus Penicillium &		
	(111)	Agaricus		
	ix)	Study of genus Puccinia &		
	,	Cercospora	24	November 2021
02	x)	Study of Crustose, Fruticose&		
02	ŕ	Foliose Lichen		
	xi)	Study of symptoms of fungal, viral,		
		bacterial and Mycoplasmal diseases		
	xii)	Collection of fungal specimen &		
		infected plant part from local region		
	xiii)	Demonstration of Mushroom		
	DD	Cultivation Technology		
		YOPHYTES		
	i)	Study of external and anatomy		
		features of vegetative and		
		reproductive parts of genera – Marchantia, Anthoceros	24	December 2021
03	ii)	Study of external and anatomy		
	11)	features of vegetative and		
		reproductive parts of genera		
		Funaria, Polytrichum and		
		Sphagnum.		
	PTERIDO	PHYTES		
	iii)	Study of Pteridophyte external and		
		anatomy features of vegetative and		
		reproductive parts of genera –	10	January 2022
		Lycopodium & Equisetum	18	January 2022
	iv)	Study of Pteridophyte external and		
04		anatomy features of vegetative and		
		reproductive parts of genera – Osmunda & Selaginella		
	v)	Study of Pteridophyte external and		
	'/	anatomy features of vegetative and		
		reproductive parts of genera –		
		Adiantum &Marsilea		
	vi)	Study of fossil specimen.		
Teachin	g Plan for T	Theory (Forth Semester)		Class: BSc. II
Sr. No.		Topic to be covered	Lectures Available	Duration
01	UNIT-I:	Cell Biology	15	February 2022 to
		-		March 2022
02	of Cell org	Cell Biology Structure & Functions	14	March 2022 to
02	of Cell org	ganenes	14	April 2022
	UNIT-III	: Genetics		April 2022 to May
03		. Genetics	17	2022 to May
Teachin	g Plan for F	Practical (Second Semester)		Class: BSc. I
Sr. No.		Topic to be covered	Lectures Available	Duration
	Gymnospe	rms: Morphology and anatomy of the -	09	
01	Pinus.			February 2022
02	Gymnospe	rms: Morphology and anatomy of the	06	E-1 - 2022
02	Gnetum			February 2022
02	Preparation	n of double stained permanent mount of	09	E-1 - 2022
03	Pinus stem	-		February 2022
0.4	Preparation	n of double stained permanent mount of	09	M 1 2022
04	-	em and leaf.		March 2022
	Detailed n	norphological study of types of root	09	
05		odifications.		March 2022

06	Detailed morphological study of types of stem with its modifications.	06	March 2022
07	Detailed morphological study of types of leaf with its modifications.	09	April 2022
08	Study of Forms of corolla.	09	April 2022
09	Study of Types of Placentation.	06	April, May 2022
10	Study of Morphology of fruits.	09	May 2022
	Manufacture of wheat wants would and madicinal	06	,
11	Morphology of plant parts used and medicinal plants prescribed in syllabi	06	May 2022
12	Utilization of plants: Spices, fiber yielding plants and food plants prescribed in syllabi.	06	May 2022
13	Record checking, certification & group discussion	03	May 2022
	g Plan for Practical (Third Semester)		Class: BSc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
51.110.	Embryology of Angiosperms:	06	Duranon
01	Observation of wide range of flowers available in the locality and methods of their pollination.	00	September 2021
	-	06	
	Study through permanent slides of T.S. of anthers,	06	
02	Microsporogenesis, L.S. of ovule, types of		October 2021
	endosperms and embryo of Capsella .	10	
03	Mounting of T.S. of anthers, Pollen grains and Pollinia.	12	October 2021
04	Anatomy of angiosperms: Preparation of double stained slides of root. (Dicots & Monocot.)	06	October 2021
	Anatomy of angiosperms: Preparation of double	06	
05	stained slides of stem.		November 2021
	(Dicot. & Monocot.)		
	Anatomy of angiosperms: Preparation of double	06	
06	stained slides of leaf.		November 2021
	(Dicot. & Monocot.)		
07	Taxonomic description of family, Verbenaceae – <i>Lantana</i> .	06	November 2021
08	Taxonomic description of family Malvaceae -Hibiscus.	06	December 2021
09	Taxonomic description of family, Fabaceae - <i>Crotalaria</i> .	06	December 2021
10	Taxonomic description of family, Caesalpinoidae- Caesalpinea.	06	December 2021
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021
12	Taxonomic description of family, Apiaceae - <i>Corindrum</i> .	06	December 2021
13	Taxonomic description of family, Apocynaceae - <i>Vinca</i> .	03	December 2021
14	Taxonomic description of family, Asclepiadaceae -Calatropis.	03	January 2022
15	Taxonomic description of family, Solanaceae - <i>Datura</i> .	03	January 2022
16	Taxonomic description of family, Lamiaceae-Oscimum.	03	January 2022
17	Record checking, certification & group discussion	03	January 2022
	g Plan for Practical (Fourth Semester)		: BSc. II
	S		

Sr. No.Topic to be coveredLectures AvailableDurati01Squash preparation for the study of various stages of mitosis12February02Smear preparation for the study of various stages of meiosis.12February,03To prove Mendel's Monohybrid ratio.06March 204To prove Mendel's Dihybrid ratio.06March 205Problems based on Interaction of genes18March, 206Problems based on Interaction of genes18March, 207To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root.12April, 208To demonstrate test for protein.06April, 209To demonstrate the lipid test in oily seeds.06May 2010To demonstrate the test for starch / cellulose.06May 2011To demonstrate the activity of enzyme amylase from germinating Wheat grains.12May 20	2022 2022 2022 2022 2022 2022 2022 202
of mitosis 12 February	2022 2022 2022 2022 2022 2022 2022
of meiosis. To prove Mendel's Monohybrid ratio. Of March 2 To prove Mendel's Dihybrid ratio. Of March 2 Of Problems based on Interaction of genes Of Problems based on Interaction of genes Of To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root. Of To demonstrate test for protein. Of To demonstrate the lipid test in oily seeds. Of To demonstrate the test for starch / cellulose. Of To demonstrate the activity of enzyme amylase Of March 2 Of March 2 Of March 2 Of To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root. Of March 2 Of To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root. Of March 2 Of To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root. Of March 2 Of Marc	2022 2022 2022 2022 2022 2022
To prove Mendel's Dihybrid ratio. 06 March 2 07 Problems based on Interaction of genes 18 March, 2 08 Problems based on Interaction of genes 18 March, 2 09 To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root. 09 To demonstrate test for protein. 09 To demonstrate the lipid test in oily seeds. 10 To demonstrate the test for starch / cellulose. 11 To demonstrate the activity of enzyme amylase 12 May 20	2022 2022 2022 2022 2022
Problems based on Interaction of genes 18	2022 2022 2022 2022 022
Problems based on Interaction of genes 18	2022
To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root. To demonstrate test for protein. To demonstrate test for protein. To demonstrate the lipid test in oily seeds. To demonstrate the test for starch / cellulose. To demonstrate the activity of enzyme amylase To demonstrate the activity of enzyme amylase May 20	022
sucrose in cane sugar / beet root. To demonstrate test for protein. O6 April 2 To demonstrate the lipid test in oily seeds. O6 May 20 To demonstrate the test for starch / cellulose. To demonstrate the activity of enzyme amylase 12 April, 2 022	
709 To demonstrate the lipid test in oily seeds. 709 To demonstrate the lipid test in oily seeds. 709 To demonstrate the test for starch / cellulose. 709 May 200 May	
10 To demonstrate the test for starch / cellulose. 10 To demonstrate the activity of enzyme amylase 11 To demonstrate the activity of enzyme amylase 12 May 20)22
10 06 May 20 11 To demonstrate the activity of enzyme amylase 12 May 20	
)22
)22
Teaching Plan for Theory (Fifth Semester) Class: BSc	. III
Sr. No. Topic to be covered Lectures Available Durati	on
01 Unit-V Ecology and Environments September November	
02 Unit - VI: Ecosystem 16 December 2 January 2	2022
Teaching Plan for Practical (Fifth Semester) Class: BS	
Sr. No. Topic to be covered Lectures Available Durati	on
To study the effect of temperature and organic solvent on permeability of plasma membrane. 03 October	2021
02 To determine the path of water (Ascent of sap) 06 October	2021
To determine the rate of transpiration by Ganongs photometer. October	2021
To determine rate of photosynthesis under varying quality of light and CO2 concentration. 03 October	2021
Separation of chloroplast pigments by paper chromatography method. October	2021
06 To study antagonism of salts. 09 November	r2021
To study effect of IAA and Gibberellins on seed germination. 03 Novembe	r2021
	r2021
08 To demonstrate exo and endosmosis. 03 Novembe	14041
08To demonstrate exo and endosmosis.03November09To demonstrate fermentation.03December	
09 To demonstrate fermentation. 03 December 10 To demonstrate transpiration 03 December	r 2021
09 To demonstrate fermentation. 03 December	r 2021 r 2021
09 To demonstrate fermentation. 03 December 10 To demonstrate transpiration by Bell jar. 03 December 11 To demonstrate anaerobic respiration in processing transpiration in pr	r 2021 r 2021 r 2021

	Nymphaea.			
14	Study of morphological and anatomical adaptations in xerophytes – <i>Nerium</i> , <i>Casuarina</i> .	06	December 2021	
15	Determination of pH of different soils and water samples by pH papers	09	January 2022	
16	Study of meteorological instruments –Rain gauge, Hygrometer.	09	January 2022	
Teaching Plan for Theory (Sixth Semester) Class: BSc. III				
Sr. No.	Topic to be covered	Lectures Available	Duration	
01	Unit-II Gene Structure and Expression	17	February 2022 to March 2022	
02	Unit-V : Plant Tissue Culture	16	April 2022 to May 2022	
Teachi	ing Plan for Practical (Sixth Semester)		Class: BSc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration	
Sr. No. 01	Topic to be covered Isolation of DNA by crude method	Lectures Available 18	Duration February 2022	
01	Isolation of DNA by crude method	18	February 2022 February, March	
01 02	Isolation of DNA by crude method Demonstration of Centrifugation	18 03	February 2022 February, March 2022	
01 02 03	Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air	18 03 12	February 2022 February, March 2022 March 2022	
01 02 03 04	Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air Flow	18 03 12 09	February 2022 February, March 2022 March 2022 March, April 2022	
01 02 03 04 05	Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air Flow Cleaning and Sterilization of Glassware	18 03 12 09 12	February 2022 February, March 2022 March 2022 March, April 2022 April 2022	
01 02 03 04 05 06	Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air Flow Cleaning and Sterilization of Glassware Demonstration of technique of Micropropogation	18 03 12 09 12 12	February 2022 February, March 2022 March 2022 March, April 2022 April 2022 April 2022	



SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA **DEPARTMENT OF ZOOLOGY** DEPRTMENTAL ACADEMIC CALENDAR 2021-22

Departmental Academic Calendar (2021-22)

Departmental Academic Calendar (2021-22)
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Departn	nental Academic Calenda	ar (2021-22)					
Sr. No.	Activity Commencement Cessation		Total	Days			
01	First Session	30/08/2021	15/01/2022	10	5		
02	Admission Process	01/09/2021	18/09/2021	14			
	Teaching Days (Odd	27/09/2021	30/10/2021	26			
03	Semesters)	08/11/2021	15/01/2022	57	83		
04	Induction Program for First Year Students	20/09/2021	25/09/2021	06	06		
05	First Term Vacation	01/11/2021	06/11/2021	06	5		
06	Summer 2022 Examination	27/01/2022	05/02/2022	19)		
07	Second Session	17/01/2022	31/05/2022	10	9		
08	Teaching Days (Even Semesters)	07/02/2022	31/05/2022	90)		
08	Second Term Vacation	01/06/2022	30/06/2022	26	5		
09	Even Semesters University ExmWinter 2022	01/06/2022	01/06/2022	30			
10	Commencement of next Academic session		01/07/2022				
Sr. No.	Public H	[oliday	Day & Date				
01	Ganesh Chaturthi	ionaly	Friday, 10 th September, 2021				
02	Gauri Pujan		Monday, 13 th September, 2021				
03	Mahatma Gandhi Jayant	i	Saturday, 02 th October, 2021				
04	Sarvpitri Amavasya		Wednesday, 06 th Oc		21		
05	Dasara		Friday, 15 th October, 2021				
06	Eid A Milad		Tuesday, 19th October, 2021				
07	C 1.T .:	Friday, 19th November, 2021					
	Gurunanak Jayanti		1 Huay, 17 Hovelin		Saturday, 25 th December, 2021		
08	Christmas				1		
08 09	-		Saturday, 25 th Dece Friday, 14 th January	mber, 202 , 2022			
09 10	Christmas Makarsankranti Republic Day		Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan	mber, 202 , 2022 nuary, 202	22		
09 10 11	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah	araj Jayanti	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru	mber, 202 , 2022 nuary, 202 nary, 2022	22		
09 10 11 12	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri	araj Jayanti	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March	mber, 202 , 2022 nuary, 2022 nary, 2022 n, 2022	22		
09 10 11	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day)	araj Jayanti	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March,	mber, 202 , 2022 nuary, 202 nary, 2022 n, 2022 2022	22		
09 10 11 12 13 14	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa	× •	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March	mber, 202 , 2022 nuary, 202 nary, 2022 n, 2022 2022	22		
09 10 11 12 13	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day)	× •	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March,	mber, 202 , 2022 nuary, 2022 nary, 2022 n, 2022 2022 1, 2022	22		
09 10 11 12 13 14	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa Dr. Babasaheb Ambedka	× •	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March, Saturday, 02 nd April	mber, 202 , 2022 nuary, 2022 nary, 2022 n, 2022 1, 2022 1, 2022	22		
09 10 11 12 13 14 15	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa Dr. Babasaheb Ambedka Jayanti	ar Jayanti / Mahavir	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March, Saturday, 02 nd April Thursday, 14 th April	mber, 202 , 2022 nuary, 2022 n, 2022 2022 1, 2022 1, 2022 1, 2022	22		

Dr. M.R.Solanke

Faculty: Science Subject: ZOOLOGY

Period	PRACTICAL	1	2	3	4	PRACTICAL
Day /	8.00-10.24	11:00 to	11:48 to	12:36 to	1:34 to	2:30 to
Time		11:48	12:36	1:24	2:22	4.14pm
MON		II (T)				III (P)
TUE	III(P)					
WED						I(P)
THUS	I(P)	II (T)				
FRI				III(T)		II(P)
					Practical	Practical (II
		7.38 to	8.18 to	9.06 to	(batch I)	batch)
		8.18	9.06	9.54 am	10.04	12.28 to 2.52
					to12.28	
SAT				I(T)		II(P)

^{*}T= Theory , P= Practical

Allotted Workload

Subject: Zoology Year: 2021-22

Sr. No.	Class	No.	Paper Allotted		
No.	Class	Lectures	Tutorials	Practical	Allotted
1	BSc I	01		06	
2	BScII	02		06	
3	BSc III	01		06	

Total Workload per week (L+P): 05 (L) + 18(P) = 22(17 hrs. and 36 min)

Teaching Periods Available per month during the session 2021-22

Faculty: Science (**Dr. M. R. Solanke**) Subject: Zoology

		ODD SEMESTER					EV	EN SEM	ESTER			
Class	Period s	SEP T - 21	OC T-21	NOV -21	DE C- 21	JA N- 22	Total	FEB -22	MA R- 22	APR - 22	MAY -22	Total
B Sc.	Theory	00	04	03	03	03	13	02	04	04	04	14
I	Practic al	06	21	18	30	12	87	18	30	21	24	93
BSc.	Theory	02	08	07	09	04	30	07	09	07	08	31
II	Practic al	00	24	15	24	12	75	15	21	24	24	84
BSc.	Theory	00	04	02	05	01	12	03	03	04	04	14
III	Practic al	06	21	24	24	12	87	21	24	24	24	93

Teaching	Plan for Theory (First Semester) Class : B .Sc. P	art I	
Sr. No.	Life and diversity of non-chordate	Lectures	Lectures
SI. NO.	(chapter -Phylum -Porifera mand Phylum-Coelenterata)	Available	Utilized
1	Phylum Porifera: General Characters	13	
	Type study: Scypha:		
2	a) Habit, Habitat, External Features	07	
2	b) Cell types and Spicules	0,	
	c) Structure and significances of canal system		
3	Phylum Coelenterata: General Characters		
	Type study: Metridium:		
	a) Habits and habitat, External features	0.5	
4	b) Gastro-vascular cavity	06	
	c) Mesenteries		
	d) Reproduction		
Sr. No.	Life and diversity of Non-Chordata	Lectures Available (87)	
	Observation, classification up to classes and sketching of	Available (67)	
	following animals		
01	Phylum Protozoa	06	
02	Phylum Porifera	06	
03	Phylum Coelenterate	06	
03	Phylum Helminth	06	
05	Phylum Annelida	06	
06		10	
07	Phylum Arthropoda Phylum Mollugga		
	Phylum Mollusca	06	
10	Phylum Echinodermata	06	
11	Phylum Hemichordata	05	
12	Permanent slide study	10	
13	Anatomical study through computer aided techniques, video	10	
14	clippings, photographs and other available resources Mountings	10	
14	Wountings	10	
Sr. No.	Cell and developmental biology, (Unit -II)	Lectures	
01	Illusotantian and function of Calai complay	Available (14) 04	
	Ultrastructure and function of Golgi- complex	03	
02	Ultrastructure and function of Ribosome		
03	Ultrastructure and function of Mitochondria	03	
04	Ultrastructure and function of Lysosomes	04	
Sr. No.	Cell and development Biology	Lectures	
51. 10.	Cen and development blology	Available (93)	
01	Cell Biology	43	
	Use care and maintenance of microscope	03	
	Bacterial culture and gram staining	03	
	Permeability test using erythrocytes	07	
	Preparation of polytene chromosome in chironomous or	10	
	drosophila larvae		
	Preparation of various stages of mitosis in onion root tips	10	
	Preparation of various stages of meiosis in insect testies	10	
02	Developmental Biology	51	
	Study of stages of gametogenesis in rat or frog	06	
	Study different types of animal eggs	09	
	Study of developmental stages (life cycle) of Cockroach, Housefly, Butterfly, Moth, Frog	09	
	Demonstration of developing chick through available resources	09	
	Developmental stages of frog	06	
	Permanent slides of chick embryos at 24,36,48,72hrs of incubation	06	
		06	
	Study of different types of placenta with suitable histogical	06	

	Slides or visual diagram		
Teaching	Plan for Theory (Third Semester) Class: B Sc. Part	t TT	1
	• •	Lectures	
Sr. No.	Life and diversity of chordata and concept of evolution	Available (30)	
	(unit-II class-Amphibia and Reptilia)	18	
01	Habits and Habitat	01	
02	External characters	01	
03	Respiratory organs	02	
04	Circulatory system	03	
05	urinogenital system,	03	
06	parental care in amphibia	02	
07	Reptiles	01	
08	Circulatory system	02	
09	Urinogenital system	02	
10	Snake venom and antivenom	01	
	Unit -III class Aves and Mammals	(12)	
	Class-Aves		
01	General characters	01	
02	External characters	01	
03	Respiratory system	02	
04	Urino-genital system	02	
05	Flight adaptation	02	
06	Migration in Birds	02	
0.7	Class: Mammalia	0.1	
07	Morphology of mammalian endocrine glands	01	
08	Aquatic mammals	01	
Teaching	Plan for Practicals (Third Semester) Class: B Sc. Pa		T
Sr. No.	Life and diversity of chordata and concept of evolution	Lectures Available (75)	
A	Taxonomy of Chordata	Tivanable (15)	
1	General characters and classification of phylum chordata	03	
	General characters and classification up to order of the	- 05	
	following chordate as per availability in the laboratory from the		
	major orders		
a	Protochordata	03	
В	Agnatha	03	
С	Pisces	03	
D	Amphibia	03	
e	Reptilia		
		03	
F		03	
F G	Aves Mammalia	03 03 03	
G	Aves	03	
	Aves Mammalia	03	
G B	Aves Mammalia Anatomical study through computer aided techniques, video	03 03	
G	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system	03	
G B	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system,	03 03 06	
G B	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems	03 03	
G B 1 2	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals	03 03 06	
G B 1 2 C D	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull	03 03 06 06	
G B 1 2 C D E	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution	03 03 06 06 06	
G B 1 2 C D E 1	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils	03 03 06 06 06	
G B 1 2 C D E 1 2	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution	03 03 06 06 06 06	
G B 1 2 C D E 1	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ	03 03 06 06 06 06	
G B 1 2 C D E 1 2 I	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill,	03 03 06 06 06 06 03	
G B 1 2 C D E 1 2	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill, Platypus	03 03 06 06 06 06	
G B 1 2 C D E 1 2 I Ii	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill, Platypus Mimicry- coloration in animals through available examples in	03 03 06 06 06 06 03 03	
G B 1 2 C D E 1 2 I	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill, Platypus Mimicry- coloration in animals through available examples in laboratory	03 03 06 06 06 06 03	
G B 1 2 C D E 1 2 I Ii 3	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill, Platypus Mimicry- coloration in animals through available examples in laboratory Beak and leg modification with reference to parrot, woodpecker,	03 03 06 06 06 06 03 03 03	
G B 1 2 C D E 1 2 I Ii 3	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill, Platypus Mimicry- coloration in animals through available examples in laboratory Beak and leg modification with reference to parrot, woodpecker, kingfisher, heron, duck, sparrow or pigeon, hawk or kite, owl.	03 03 06 06 06 06 03 03	
G B 1 2 C D E 1 2 I Ii 3	Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose bones of skull Evolution Study of fossils and living fossils Study of evidences of evolution analogous and homologous organ Connecting links – peripatus, Archeopteryx, Echidna, Duckbill, Platypus Mimicry- coloration in animals through available examples in laboratory Beak and leg modification with reference to parrot, woodpecker,	03 03 06 06 06 06 03 03 03	

Ii	Frog- T.S. Lung, Stomach, Kidney, intestine	06	
	Plan for Theory (Fourth Semester)	Class : B Sc.	Part II
Teaching	Tian for Theory (Fourth Semester)	Lectures	I alt II
	Advanced Concerting and Animal Facility	Available	
Sr. No.	Advanced Genentics and Animal Ecology		
	UNIT 3 : Sex determination	Total(31)	
0.1	D' C 1	(14)	
01	Discovery of sex chromosome		
02	Sex determination in animal	04	
03	Genetic disorder	03	
04	Non-disjunction	02	
05	Biochemical genetics	03	
06	Inheritance of sex-linked genes in man	02	
	Unit- V Ecology	17	
	Cint- v Ecology	17	
01	concept and scope		
02	Abiotic factors		
	a)Water		
	B) Temperature		
	c) Homeotherms and poikilotherms		
	d)Dormancy		
	e) Dormancy in different Group of animals		
	h) Hibernation		
	g) Aestivation		
	h) Diapauses		
	i) Light		
03	Biotic factors		
	a)Interspecific and intraspecific association		
	b)Commensalism		
	c) Mutualism		
	d) Predation		
	e) Parasitim		
Teaching	f) Antagonism	Class	BSc. Part III
	f) Antagonism Plan for Practical (Forth Semester)		BSc. Part III
Teaching Sr. No.	f) Antagonism	Class: Available lecture (84)	BSc. Part III
Sr. No.	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology	Available lecture	BSc. Part III
Sr. No.	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment	Available lecture (84)	BSc. Part III
Sr. No. A	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man	Available lecture (84)	BSc. Part III
Sr. No.	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of	Available lecture (84)	BSc. Part III
Sr. No. A 1 2	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads	Available lecture (84) 03 03	BSc. Part III
Sr. No. A	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male	Available lecture (84)	BSc. Part III
Sr. No. A 1 2	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures)	03 03 03	BSc. Part III
Sr. No. A 1 2 3 4	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies	03 03 03 03	BSc. Part III
Sr. No. A 1 2	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures	03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs	03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome	03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures	03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy	03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7	f) Antagonism Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them	03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free	03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes , rolling of tongue, PTC test and other notable traits	03 03 03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes , rolling of tongue, PTC test and other notable traits Ecology	03 03 03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes , rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample	03 03 03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample	03 03 03 03 03 03 03 03 03 03 03 03 03 0	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water	03 03 03 03 03 03 03 03 03 03 03 03 03 0	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen	03 03 03 03 03 03 03 03 03 03 03 03 03 0	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A B	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen Estimation of Salinity	03 03 03 03 03 03 03 03 03 03 03 03 03 0	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A B C	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen Estimation of Free CO2, Carbonate and bicarbonate	Available lecture (84) 03 03 03 03 03 03 03 03 03 0	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A B	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen Estimation of Free CO2, Carbonate and bicarbonate Estimation of Calcium and hardness of water	03 03 03 03 03 03 03 03 03 03 03 03 03 0	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A B C D	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen Estimation of Salinity Estimation of Free CO2, Carbonate and bicarbonate Estimation of aquatic and terrestrial animals based on study of	03 03 03 03 03 03 03 03 03 03 03 03 06 10 03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A B C D 3	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes , rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen Estimation of Free CO2, Carbonate and bicarbonate Estimation of Calcium and hardness of water Adaptation of aquatic and terrestrial animals based on study of museum specimen	03 03 03 03 03 03 03 03 03 03 03 03 06 10 03 03 03 03 03 03 03 03 03 03 03 03 03	BSc. Part III
Sr. No. A 1 2 3 4 5 6 7 8 I B 1 2 A B C D	Plan for Practical (Forth Semester) Advanced genetics and animal Ecology Genetic Experiment Recording of mendelian traits in man Detection of monohybrid and dihybrid cross with the help of plastic beads Culturing drosophila using standard methods – drosophila male and female identification, mutant forms (from pictures) Demonstration of bar bodies Preparation of human karyotypes from Xerox pictures Photoslides for turner syndrome, klienfelters syndrome, downs syndrome Detection of syndrome from chromosome spread pictures Study of following human genetic traits and application of hardy Weinberg principle to them Baldness, length of index and ring finger, attached and free earolobes, rolling of tongue, PTC test and other notable traits Ecology a) Use of pH meter for estimation of pH in soil sample b) Use of pH meter for estimation of pH in water sample Study of Chemical parameters of water Estimation of dissolved oxygen Estimation of Salinity Estimation of Free CO2, Carbonate and bicarbonate Estimation of aquatic and terrestrial animals based on study of	03 03 03 03 03 03 03 03 03 03 03 03 06 10 03 03 03 03 03 03 03 03 03 03 03	BSc. Part III

	T' 11 11 4' 4 1	02	
5	Field collection methods	03	
	Identification of common animals – soil invertebrate diversity,	00	
6	diversity of birds and mammals in parks/ botanical gardens,	08	
_	threats to local diversity		
7	Construction of food web diagram based on the field visit	03	
8	Mounting of plankton	03	
9	Qualitative analysis of fresh water plankton	03	
С	General		
1	Visit to a national park or sanctuaries and submission of report	03	
Teaching	Plan for Theory (Fifth Semester) Class: B. Sc. Part	Ш	
C. No	Animal Physiology And Economic Zoology	Lectures	
Sr. No.	Unit Iv Reproductive Physiology:	Available (12)	
1	Estrous and menstrual cycle	3	
2	hormonal control of reproduction in males	2	
3	hormonal control of reproduction in females	2	
4	Structure of mammalian Placenta.	3	
5	Physiology of mammalian Placenta.	2	
	Plan for Practicals (Fifth Semester) Class: BSc. Pa		
Teaching	Tian for Tracticals (Firth Scinester) Class: BSC. 1 a	Lectures	
Sr. No.	Animal physiology and Economic zoology	Available (87)	
01	Detection of blood group in human being	06	
	Detection of blood group in human being Differential count of blood		
02		06	
03	Estimation of hemoglobin percentage with the help of	06	
0.4	haemometer.	0.5	
04	R. B. C. Count	06	
05	W. B. C. count	06	
06	Prepartion of haemin crystals	06	
07	Measurement of blood pressure	06	
08	Action of salivary amylase on starch	06	
09	Qualitative detection of nitrogenous waste products (Ammonia,	06	
0)	urea, uric acid) in given sample.	00	
10	Demonstration of kymograph unit, Respirometer through	06	
10	available resources.	00	
11	Observation and identification of Insect Pests of local crops, and	06	
11	predator insects.	00	
12	Life cycle of honey bee, Lac Insect, silk moth	06	
	Histological slides of major organs of respiratory system,		
13	circulatory system, Nervous system, Different type of muscles,	09	
	endocrine gland, testis and ovary.		
1.4	Study of locally available fishes, Indian major carp, common	06	
14	carp and Exotic Carp	06	
Teaching	Plan for Theory (Sixth Semester) Class: B. Sc.	III	
	Biotechnology: Genetic Engineering	Lectures	
Sr. No.	Unit-VI: Immunology	Available(14)	
01	Introduction to immune system	02	
02	Innate and adaptive immunity	02	
03	Types and production of immune cells	02	
04	Complement system	02	
05	Humoral immunity: Antigen and haptens	02	
06	Antibody: Types, function and production	03	
07	Immunological techniques	02	
	Plan for Practicals (Sixth Semester) Class: B. Sc		
Teaching	Tian for Tracticals (Statil Schiester) Class: D. Sc	Lectures	
Sr. No.	Biotechnology: Genetic Engineering		
Ω1	Migra taghnique sagna and immentance	Available (93)	
01	Micro technique scope and importance	03	
02	Preparation of fixative- alcohol, acetone, formalin, Bouin's	06	
	fluid, Cornoy fluid, Formal sublimate		
03	Collection of various tissues/ organs from slaughter house for	03	
	micro-technique		
04	Preparation of Alcohol grades, dehydration and clearing of	04	
l	tissues		

05	Use and care of Oven	03	
06	Embedding and block making, trimming of block.	12	
07	Use and care of different types of Microtome	03	
08	Honing and stropping Knives	04	
09	Section cutting and spreading	04	
10	Preparation of various stains-Borax carmine Acetocarmine, Aceto-orcein, Hematoxylin, eosin	04	
11	Staining of the sections, (Double staining), Mounting	10	
12	Camera Lucida. Use and Drawings	09	
	Oculomicrometer scale/ similar micro-measurements use	06	
	Introduction to models of PCR, Southern blotting through available resources	06	
13	Vital Staining of mitochondria by using Janus, Green B stain	06	
	Extraction of DNA by using salt, detergent and enzymes from natural sources from any animal tissue / plant material	10	

Faculty: Science Subject: ZOOLOGY

Name of Faculty: Dr. Madhuri S. Hingankar

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Period	PRACTICAL	1	2	3	4	PRACTICAL
Day /	08.00 to	11:00 to	11:48 to	12:36 to	1:34 to	2:30 to 4.54
Time	10.24	11:48	12:36	1:24	2:22	2:30 10 4.34
MON	III (Pr.)			III (Th.)		
TUE			III (Th.)			III (Pr.)
WED				I (Th.)		I (Pr.)
THUS	I (Pr.)	I (Th.)				
FRI	II (Pr.)	II (Th.)				
					Practical	Practical
		7.30 to	8.18 to	9.06 to	10.04 -	12.28 to 2.52
		8.18	9.06	9.54 am	12.28 pm	pm
SAT					II (Pr.)	

Allotted Workload

Subject: Zoology Year: 2021-22

Cr. No.	Class	No. of periods per week				
Sr. No. Class		Lectures (L)	Practical (P)			
1	B. Sc I	02	06			
2	B. Sc II	01	06			
3	B. Sc III	02	06			

Total Workload per week (L+P): 05 (L) + 18(P) = 23 (18 hrs. and 24 min.)

Teaching Periods Available per month during the session 2021-22

Faculty: Science Subject: Zoology

Name of Faculty: Dr. Madhuri S. Hingankar

		ODD SEMESTER							EVE	N SEME	STER	
Class	Periods	SEPT -21	OCT -21	NOV -21	DEC -21	JAN -22	Total	FEB- 22	MAR -22	APR - 22	MAY- 22	Total
B Sc.	Theory	02	07	06	10	04	29	06	10	07	08	31
I	Practical	06	21	18	30	12	87	18	30	21	24	93
В.	Theory	00	04	02	05	01	12	03	03	04	04	14
Sc. II	Practical	00	24	15	24	12	75	15	21	24	24	84
BSc.	Theory	02	07	08	08	04	29	07	08	08	08	31
III	Practical	06	21	24	24	12	87	21	24	24	24	93

Teachin	g Plan for Theory (First Semester)	Class: B. Sc. Part I	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	Life And Diversity Of Nonchordates	29	
	Unit IV Phylum Annelida & Arthropoda		
1	Phylum Annelida: General Characters.	1	
	Type study: Leech:		
	a) External features		
2	b) Digestive system	6	
	c) Excretory system		
	d) Reproductive system		
3	Phylum Arthropoda: General Characters.	1	
	Type study: Cockroach:		
	a) Habits and habitat, External features,		
4	b) Digestive system,	6	
	c) Respiratory system,		
	d) Reproductive system.		
	Unit VI Phylum Hemichordata, Coral		
	Reefs and Larval forms.		
1	Phylum Hemichordata: General Characters.	1	
	Type study: Balanoglossus:		
	a) Body organization.		
2	b) Affinities of Balanoglossus with Non-	3	
	chordate		
	c) Affinities of Balanoglossus with chordate		
3	Corals and Coral reefs	2	
	Parasitic adaptations in Helminthes:		
4	a) Morphological	3	
	b) Physiological		
	Larval forms and their significance:		
	a) Amphiblastula.		
5	b) Planula.	6	
3	c) Trochophore.	O	
	d) Bipinnaria.		
	e) Brachiolaria.		
	g Plan for Practical (First Semester)	Class: B. Sc Part I	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Life And Diversity Of Nonchordates	87	

1	Observation, classification up to classes and		
	sketching of following animals		
	Phylum Protozoa	3	
	Phylum Porifera	3	
	Phylum Coelenterata	6	
	Phylum Helminthes	3	
	Phylum Annelida	6	
	Phylum Arthropoda	9	
	Phylum Mollusca	9	
	Phylum Echinodermata	6	
	Phylum Hemichordata	3	
2	Permanent slide study	12	
	Anatomical study through computer aided		
3	techniques, video clippings, photographs	15	
	and other available resources		
4	Mountings	12	
Teachin	g Plan for Theory (Second Semester)	Class: B. Sc. Part I	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	CELL AND DEVELOPMENTAL	21	
	BIOLOGY	31	
	Unit –I		
	General organization of Prokaryote and	_	
1	Eukaryote Cell.	3	
	Ultra structure and functions of, Plasma		
2	membrane	3	
	Ultra structure types and functions of,		
3	Endoplasmic reticulum	4	
	Unit- V		
	Cleavage and development up to coelom		
1	formation in Amphioxus.	4	
	Cleavage, Blastulation and gastrulation up		
2	to the formation of three germ layers in	6	
	Frog, Fate map.	Ü	
	Cleavage, Blastulation and gastrulation up		
3	to the formation of three germ layers in	6	
3	chick.	O	
	Extra embryonic membranes in chick:		
4	Development and significance.	5	
Teachin	g Plan for practical (Second Semester)	Class: B Sc. Part I	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
1	Cell Biology	39	Lectures offized
1	Use care and maintenance of microscope	3	
		3	
	Bacterial culture and gram staining Parmoshility test using arythropytes	6	
	Preparation of Polytone chromosome in	U	
	Preparation of Polytene chromosome in	9	
	Chironomous or drosophila larvae		
	Preparation of various stages of mitosis in	9	
	onion root tips		
	Preparation of various stages of meiosis in	9	
2	insect testes Developmental Biology	5 A	
2	Developmental Biology	54	
	Study of stages of gametogenesis in rat or	6	
	frog		
	Study different types of animal eggs	9	
	Study of developmental stages (life cycle)	9	
	of Cockroach, Housefly, Butterfly, Moth,		

	Erog		
	Frog Demonstration of developing chick through		
	available resources	9	
	Developmental stages of frog	6	
		0	
	Permanent slides of chick embryos at	9	
	24,36,48,72hrs of incubation		
	Study of different types of placenta with	6	
/D 1.	suitable histogical Slides or visual diagram		
	g Plan for Theory (Third Semester)	Class: B Sc. Part II	T . TT.'1' 1
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	LIFE AND DIVERSITY OF	10	
	CHORDATE AND CONCEPT OF	12	
	EVOLUTION		
	Unit-I Phylum Chordata		
1	Origin of Chordata.	1	
	Protochordates: Type study: Amphioxus:		
_	a) Habits and habitat, External Characters,		
2	c) Digestive system and feeding,	4	
	d) Excretory organs, gonads,		
	e) Affinities of Amphioxus.	4	
3	Affinities of Agnatha	1	
	Series Picses: Type study: Scoliodon		
	sarrokawah (Dogfish)		
	a) Habits and habitat, External		
	Characters, b) Digestive system:		
	alimentary canal and digestive		
	glands,		
4	b) Respiratory system: respiratory organ	6	
	and mechanism of respiration,		
	_		
	d) circulatory System: Structure and working of Heart, major arteries and veins,		
	e) Lateral line receptors,		
	f) Migration in fishes-Types, causes		
	and significance.		
Teachin	g Plan for Practical (Third Semester)	Class: B Sc. Part II	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
51.110.	LIFE AND DIVERSITY OF	Lectures Available	Lectures offized
	CHORDATE AND CONCEPT OF	75	
	EVOLUTION	13	
A	Taxonomy of Chordate		
	General characters and classification of		
1	phylum chordate		
	General characters and classification up to		
	order of the following chordate as per	3	
2	availability in the laboratory from the major		
	orders		
A	Protochordata Protochordata		
b	Agnatha	3	
c	Pisces	6	
d	Amphibia	6	
e	Reptilia	6	
f	Aves	6	
G	Mammalia	6	
В	Anatomical study through computer aided	<u> </u>	
	techniques, video clippings, Models,		
	tttiiiiques, riuco emppiiigo, irioueis,		1

	photographs and other available resources		
1	photographs and other available resources		
1	Frog- viscera, digestive system, male and	3	
2	female reproductive system		
2	Rat or mouse or Rabbit – digestive system,	6	
	arterial system, venous system and	6	
	reproductive systems		
C	Slides of hair impression of different locally	3	
-	available mammals		
D	Osteology- Fowl and Rabbit excluding	6	
-	loose bones of skull		
E	Evolution	2	
1	Study of fossils and living fossils	3	
2	Study of evidences of evolution		
I	analogous and homologous organ	3	
Ii	Connecting links – Peripatus,	3	
	Archaeopteryx, Echidna, Duckbill, Platypus		
3	Mimicry- coloration in animals through	3	
	available examples in laboratory		
4	Beak and leg modification with reference to		
	parrot, woodpecker, kingfisher, heron, duck,	3	
	sparrow or pigeon, hawk or kite, owl.		
F	Histological slides		
i	Amphioxus- T.S. Oral Hood, pharynx and	3	
1	tail.		
Ii	Frog- T.S. Lung, Stomach, Kidney, intestine	3	
	g Plan for Theory (Fourth Semester)	Class: B Sc. Part II	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	ADVANCED GENETICS AND	14	
	ANIMAL ECOLOGY	14	
	Unit- I		
1	Concept of genes:	1	
2	Mendel's laws of hereditary	1	
	Monohybrid Cross:		
3	Laws of dominance,	3	
	Law of segregation.		
4	Dihybrid cross:	3	
7	Law of independent assortment.		
	Interactions of genes:		
5	Supplementary factor,	3	
	complementary factor,		
6	duplicates factor, inhibitory factors, and	3	
	lethal factors dominant and recessive.		
	g Plan for Practical (Fourth Semester)	Class: B. Sc Part II	
Sr. No.	Topics to be covered	Lectures available	Lectures Utilized
	ADVANCED GENETICS AND	84	
	ANIMAL ECOLOGY	T-1	
Α	Genetic Experiment		
1	Recording of Mendelian traits in man	3	
2	Detection of monohybrid and dihybrid cross	6	
	with the help of plastic beads	U	
	Culturing drosophila using standard		
3	methods – drosophila male and female	6	
	identification, mutant forms (from pictures)		
4	Demonstration of bar bodies	3	
5	Preparation of human karyotypes from	3	
<u> </u>	Xerox pictures	J	
		·	

6	Photo slides for turner's syndrome,	3	
	klienfelter's syndrome, downs syndrome		
7	Detection of syndrome from chromosome	3	
	spread pictures		
	Study of following human genetic traits and		
8	application of hardy Weinberg principle to	3	
	them		
	Baldness, length of index and ring finger,		
I	attached and free earlobes, rolling of	6	
	tongue, PTC test and other notable traits		
В	Ecology		
	a) Use of pH meter for estimation of pH in		
1	soil sample	6	
	b) Use of pH meter for estimation of pH in	Ç	
	water sample		
2	Study of Chemical parameters of water	3	
A	Estimation of dissolved oxygen	3	
В	Estimation of Salinity	3	
C	Estimation of Free CO2, Carbonate and	3	
	bicarbonate		
D	Estimation of Calcium and hardness of	3	
	water		
3	Adaptation of aquatic and terrestrial animals	3	
	based on study of museum specimen		
4	Study of natural ecosystem and field report	3	
	of the visit		
5	Field collection methods	3	
	Identification of common animals – soil		
6	invertebrate diversity, diversity of birds and	6	
	mammals in parks/ botanical gardens,		
	threats to local diversity		
7	Construction of food web diagram based on	3	
0	the field visit	2	
8	Mounting of plankton	3	
9	Qualitative analysis of fresh water plankton	3	
C	General		
1	Visit to a national park or sanctuaries and	3	
T	submission of report	Classe D. Ca. Dassé III	
	g Plan for Theory (Fifth Semester)	Class: B. Sc. Part III	T4 TI/:1:1
Sr. No.	Topic to be covered ANIMAL PHYSIOLOGY AND	Lectures Available	Lectures Utilized
	ECONOMIC ZOOLOGY	29	
	Unit-II Muscle Physiology:		
	• 0		
1	Types of Muscles: striated, non-striated and cardiac muscles	3	
	Striated muscle:		
2	a) E.M. Structure	4	
2	b) Chemical Composition	4	
3	Neuromuscular junction.	3	
	Mechanism of muscle contraction by		
4	Sliding filament theory	3	
	a) Physical and Chemical changes during		
	muscle contraction:		
5	i) muscle twitch, tetanus	6	
	ii) isometric and isotonic contraction	J	
	iii) summation of Stimuli, all or none law,		
L	m, semination of Samuan, an of none law,		l

	iv) Fatigue.		
6	Rigor mortis.	1	
	Unit-V Agricultural Zoology		
1	Economic importance of insects	1	
2	Beneficial Insects	1	
3	Harmful insects, injuries and their control	1	
	Pestsof cotton, Sugarcane and Jowar,	2	
4	damage and their control	2	
5	Economic Importance of rodents, snakes,	2	
<i>J</i>	Owls and Bats	<i>L</i>	
6	Apiculture	1	
7	Sericulture	1	
	g Plan for Practical (Fifth Semester)	Class: BSc. Part III	T
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	Animal physiology and Economic zoology	87	
1	Detection of blood group in human being	6	
2	Differential count of blood	6	
3	Estimation of hemoglobin percentage with	6	
3	the help of haemometer.	0	
4	R. B. C. Count	6	
5	W. B. C. count	6	
6	Preparation of haemin crystals	6	
7	Measurement of blood pressure	6	
8	Action of salivary amylase on starch	6	
	Qualitative detection of nitrogenous waste		
9	products (Ammonia, urea, uric acid) in	6	
	given sample.		
10	Demonstration of kymograph unit,	6	
10	Respirometer through available resources.		
11	Observation and identification of Insect	6	
	Pests of local crops, and predator insects.		
12	Life cycle of honey bee, Lac Insect, silk	6	
1.2	moth		
	Histological slides of major organs of		
13	respiratory system, circulatory system,	9	
13	Nervous system, Different type of muscles,	,	
	endocrine gland, testis and ovary.		
1.4	Study of locally available fishes, Indian		
14	major carp, common carp and Exotic Carp	6	
Teachin	g Plan for Theory (Sixth Semester)	Class: B. Sc. III	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	MOLECULAR BIOLOGY &	21	
	BIOTECHNOLOGY	31	
	Unit I		
	Concept of Genetic material-		
	a) Definition		
	b) Experiments to prove DNA as genetic		
1	material: i) Griffith's transformation experiments	4	
	i) Griffith's transformation experiments with bacteriophage infections.		
	ii) Avery and co-workers Experiments.		
	iii) Hershey and Chase experiment.		
2	Chemistry and types DNA (A,B,Z)	3	
			i

3	Mitochondrial DNA	2	
	Chemistry types and function of RNA:		
4	mRNA, tRNA and rRNA and Non Genetic	3	
	RNA.		
- 1	Unit V		
1	Biotechnology: Genetic Engineering	1	
	Recombinant DNA technology and gene		
2	cloning-enzymes in Recombinant DNA	3	
2	technology,	2	
3	Splicing and cloning of genes,	3	
4	vectors (plasmid and phage vectors),	2	
5	Gene transfer.	2	
6	Somatic cell hybridization,	2	
7	Hybridoma technology,	2	
8	Monoclonal antibodies.	2	
0	Practical applications and suspected hazards	2	
9	of biotechnology and genetic engineering in	2	
T l. !	animals.	Class D. Ca. David	****
	g Plan for Practical (Sixth Semester)	Class: B. Sc. Part	
Sr. No.	Topic to be covered MOLECULAR BIOLOGY &	Lectures Available	Lectures Utilized
	BIOTECHNOLOGY &	93	
1		3	
1	Micro technique scope and importance	3	
	Preparation of fixative- alcohol, acetone,		
2	formalin, Bouin's fluid, Cornoy fluid,	6	
	Formal sublimate		
2	Collection of various tissues/ organs from	3	
3	slaughter house for micro-technique	3	
	Preparation of Alcohol grades, dehydration		
4	and clearing of tissues	6	
5	Use and care of Oven	3	
	Embedding and block making, trimming of		
6		12	
	block.		
7	Use and care of different types of	3	
,	Microtome		
8	Honing and stropping Knives	3	
9	Section cutting and spreading	3	
	Preparation of various stains-Borax carmine		
10	Acetocarmine, Aceto-orcein,	6	
10	Haematoxyline, eosin	Q	
	Staining of the sections, (Double staining),		
11	_	12	
	Mounting		
12	Camera Lucida. Use and Drawings	9	
13	Oculomicrometer scale/ similar micro-	6	
13	measurements use	O .	
1.4	Introduction to models of PCR, Southern	6	
14	blotting through available resources	<u> </u>	
1.7	Vital Staining of mitochondria by using		
15	Janus, Green B stain	6	
	Extraction of DNA by using salt, detergent		
16	and enzymes from natural sources from any	6	
	animal tissue / plant material		

Faculty: SCIENCE Subject: ZOOLOGY

NAME OF FACULTY: MISS SONALI ANIL TAYADE

Period	Practical	1	2	3	4	Practical
Day /	8.20 to 11	11:00 to	11:48 to	12:36 to	1:34 to	2:30 to 5:10
Time		11:48	12:36	1:24	2:22	2.30 to 3.10
MON	III(P)	I (T)				
TUE				I (T)		III (P)
WED	I(P)		II (T)			
THUS				III (T)		I (P)
FRI						II (P)
SAT		1	2	3	Practical	Practical
		7.30 to 8.18	8.18 to 9.06	9.06 to 9.54	10.04 to	12.28 to
		AM	AM	AM	12.28 PM	2.52PM
			II (T)			II(P)

Allotted Workload

Subject: ZOOLOGY Year: 2021-22

Ca No	Class	No	Paper	
Sr. No.	Class	Lectures	Practical	Allotted
1	BSc I	02	06	
2	BSc II	02	06	
3	BSc III	01	06	
4	Total	05	18	

Total Workload per week (L+P) : 05(L) + 18(P) = 23 (18 hrs. 24 m)

Teaching Periods Available per month during the session 2021-22

		ODD SEMESTER							EV	EN SEM	ESTER	
Clas s	Periods	SEPT -21	OCT -21	NOV -20	DEC -20	JA N- 21	Total	FEB -21	MA R-21	APR - 21	MAY -21	Total
В	Theory	02	07	08	08	04	29	07	08	08	08	31
Sc.	Practica 1	06	21	18	30	12	87	18	30	21	24	93
B.	Theory	01	07	06	08	05	27	05	09	08	08	30
Sc. II	Practica 1	00	24	15	24	12	75	15	21	24	24	84
BSc. III	Theory	01	04	03	05	02	15	03	05	03	04	15
	Practica 1	06	21	24	24	12	87	21	24	24	24	93

Faculty: SCIENCE Subject: ZOOLOGY

NAME OF FACULTY: MISS SONALI ANIL TAYADE

Teaching	Plan for Theory (First Semester)	Class : B Sc Part I	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	UNIT 1 : Classification of Non Chordata	15	
	and Phylum Protozoa	15	
01	Classification of Non-Chordata	02	
02	Phylum Protozoa: General characters	02	
03	Type Study: Plasmodium vivax: Structure,	07	
	Life Cycle	<u> </u>	
04	Parasitic protozoan and human diseases:	04	

	Molorio Amarkiasia Tramanasamiasia	Ι	
	Malaria, Amoebiasis, Trypanosomiasis,		
	Leishmaniasis	14	
0.5	UNIT 5	14	
05	Phylum Mollusca: General characters	01	
06	Type Study: Pila globusa	06	
07	Phylum Echinodermata: General characters	01	
08	Type Study: Asterias	06	
Teaching	Plan for Practical (First Semester)	Class : B Sc Part I	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
1	Observation, classification up to classes and	87	
1	sketching of following animals	87	
	Phylum Protozoa	03	
	Phylum Porifera	03	
	Phylum Colenterata	06	
	Phylum Helminths	03	
	Phylum Annelida	06	
	Phylum Arthopoda	09	
	Phylum Mollusca	09	
	Phyum Echinodermata	06	
	Phylum Hemichordata	03	
2		12	
2	Permanent slide study	12	
2	Anatomical study through computer aided	15	
3	techniques, video clippings, photographs and	15	
	other available resources		
4	Mountings	12	
	Plan for Theory (Second Semester)	Class: B Sc Part I	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	UNIT 3	16	
01	Ultra-structure and function of nucleus	04	
02	Ultra-structure and function of nucleolus	04	
02	Chromosome and its general organization	04	
03	Structure of polytene chromosome	02	
04	Structure of Lamp brush chromosome	02	
	UNIT 6	15	
	Placentation in Mammals : Types and		
05	functions of Placenta	04	
06	Parthenogenesis: Types and Significance	04	
07	Regeneration in invertebrates and vertebrates	04	
	Elementary idea of sources, types and use of		
08	stem cells	03	
Toochine	g Plan for Practical (Second Semester)	Class : B Sc I	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	*	39	Lectures Utilized
1	Cell Biology	03	
	Use care and maintenance of microscope	1	
	Bacterial culture and gram staining	03	
	Permeability test using erythrocytes	06	
	Preparation of polytene chromosome in	09	
	chironomous or drosophila larvae	-	
	Preparation of various stages of mitosis in	09	
	onion root tips	, , , , , , , , , , , , , , , , , , ,	
	Preparation of various stages of meiosis in	09	
	insect testies		
2	Developmental Biology	54	
	Study of stages of gametogenesis in rat or frog	06	
	Study different types of animal eggs	09	
	Study of developmental stages (life cycle) of	00	
	Cockroach, Housefly, Butterfly, Moth, Frog	09	
	Demonstration of developing chick through	22	
	available resources	09	
	Developmental stages of frog	06	
	1 = 1 . 110 p		L

Permanent shides of check embryos at 24,364,872 hrs of incubation suitable histological Sitilds or visual diagram Teaching Plan for Theory (Third Semester) Sr. No. Topic to be covered				1
Study of different types of placenta with suitable histological Sides or visual diagram O6		Permanent slides of chick embryos at	09	
Suitable histological Slides or visual diagram On			0,	
Teaching Plan for Theory (Third Semester) Sr. No. Topic to be covered Lectures Available Lectures Vitilized UNIT 4 UNIT 4 Indirect evidences of organic evolution O2 Indirect evidences of organic evolution from Morphology and comparative anatomy O3 Physiological and Biochemical evidences O4 Evidences from comparative biology O5 Direct evidences of organic evolution O6 Dating of fossils O1 Radioactive carbon dating of fossils O1 Radioactive carbon dating of fossils O1 Evidences from comparative anatomy O7 Radioactive carbon dating of fossils O1 Radioactive carbon dating of fossils O1 Evidences of connecting link UNIT 6 Indirect evidences of organic evolution O2 Dividences of connecting link UNIT 6 Indirect evidences of organic evolution O1 Evolution of Man-Brief accounts of Paraphtheus, Australopitheus, Australopitheus, Australopitheus, Australopitheus, Australopitheus, Australopitheus, Australopitheus, Australopitheus, Homoeretus, Neanderthal man, Cro-Magnon man and modern man. O3 Evolution of aortic arches in vertebrates O4 Evolution of aortic arches in vertebrates O5 Evolution of aortic arches in vertebrates O6 Evolution of aortic arches in vertebrates O7 Evolution of aortic arches in vertebrates O8 Evolution of aortic arches in vertebrates O2 Evolution of aortic arches in vertebrates O2 Evolution of aortic arches in vertebrates O6 Evolution of aortic arches in vertebrates O7 Evolution of aortic arches in vertebrates O8 Evolution of aortic arches in vertebrates O9 Evolution of aortic arches in vertebrates O9 Evolution of aortic arches in vertebrates O1 Evolution of aortic arches in vertebrates O2 Evolution of aortic arches in vertebrates O3 Evolution of aortic arches in vertebrates O3 Evolution of aortic arches in vertebrates O6 Evolution of aortic arches in vertebrates O7 Evolution of aortic arches in vertebrates O1 Evolution of aortic arches in vertebrates O1 Evolution of			06	
Sr. No. Topic to be covered Lectures Available Lectures Utilized		suitable histological Slides or visual diagram	00	
Sr. No. Topic to be covered Lectures Available Lectures Utilized				
UNIT 4				
October Octo	Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
Description		UNIT 4	14	
03	01	Meaning and scope of evolution	02	
Morphology and comparative anatomy	02	Indirect evidences of organic evolution from	02	
04 Evidences from comparative biology 01 05 Direct evidences of organic evolution 02 06 Dating of fossils 01 07 Radioactive carbon dating of fossils 01 08 Living fossils 01 09 Importance of fossils 01 10 Evidences of connecting link 01 UNIT 6 13 01 Adaptive Radiations in mammals 02 Evolution of Man Brief accounts of Parapithecus, Proporthecus, Ramapithecus, Australopithecus, Australopithecus, Ramapithecus, Homocrectus, Neandearthal man, Cro-Magnon man and modern man. 04 03 Evolution of fact in vertebrates 01 04 Evolution of ordic arches in vertebrates 02 05 Evolution of ordic arches in vertebrates 02 05 Evolution of urinogenital system in vertebrates 02 06 Errestrial 02 10 Evolution of properties in vertebrates 02 20 Evolution of properties in vertebrates 02 21 Topic to be covered Lectures Vailable Lectur	02	Morphology and comparative anatomy	02	
04 Evidences from comparative biology 01 05 Direct evidences of organic evolution 02 06 Dating of fossils 01 07 Radioactive carbon dating of fossils 01 08 Living fossils 01 09 Importance of fossils 01 10 Evidences of connecting link 01 UNIT 6 13 01 Adaptive Radiations in mammals 02 Evolution of Man Brici accounts of Parapithecus, Proporthecus, Ramapithecus, Australopithecus, Australopithecus, Ramapithecus, Homoerectus, Neandearthal man, Cro-Magnon man and modern man. 04 03 Evolution of fact in vertebrates 01 04 Evolution of fact in vertebrates 02 05 Evolution of ourinogenital system in vertebrates 02 05 Evolution of urinogenital system in vertebrates 02 06 Errestrial 02 Teaching Plan for Practical (Third Semester) Class : B Sc Part II Sr. No. Topic to be covered Lectures Available Lectures Utilized A Tractical characters and classificatio	03	Physiological and Biochemical evidences	02	
05 Direct evidences of organic evolution 02 06 Dating of fossils 01 07 Radioactive carbon dating of fossils 01 08 Living fossils 01 09 Importance of fossils 01 10 Evidences of connecting link 01 01 Adaptive Radiations in mammals 02 Evolution of Man- Bric accounts of Parapithecus, Dryopithecus, Ramapithecus, Australopithecus, Australopithecus, Homoerectus, Neanderthal man, Cro-Magnon man and modern man. 04 02 Australopithecus, Australopithecus, Homoerectus, Neanderthal man, Cro-Magnon man and modern man. 04 03 Evolution of heart in vertebrates 01 04 Evolution of acrtic arches in vertebrates 02 05 Evolution of acrtic arches in vertebrates 02 06 Animal Adaptation: Desert, aquatic and terrestrial 02 Teaching Plan for Practical (Third Semester) Class : B Sc Part II Sr. No. Topic to be covered Lectures Available Lectures Utilized A Taxonomy of Chordata 75 0 2 General characters a	04		01	
Object	05		02	
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08 Living fossils 01 09 Importance of fossils 01 10 Evidences of connecting link 01 UNT 6 13 01 Adaptive Radiations in mammals 02 Evolution of Man- Brief accounts of Parapithecus, Dryopithecus, Ramapithecus, Australopithecus, Australopithecus, Australopithecus, Australopithecus, Australopithecus, Australopithecus, Australopithecus, Australopithecus, Australopithecus, Homoerectus, Neanderthal man, Cro-Magnon man and modern man. 03 Evolution of heart in vertebrates 02 04 Evolution of abrat in vertebrates 02 05 Evolution of abrat in vertebrates 02 06 Animal Adaptation: Desert, aquatic and terrestrial 02 Teaching Plan for Practical (Third Semester) Class: B Sc Part II Sr. No. Topic to be covered Lectures Available Lectures Utilized A Taxonomy of Chordata 75 1 General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders A Protochordata 03 C Pisces 06 A A Protochordata 03 C Pisces 06 D Amphibia 06 E Reptilia 06 E Reptilia 06 E Reptilia 06 F Aves 06 G Mammalia 06 E Reptilia 06 F Aves 06 G Mammalia 06 F Aves 06 F Aves 06 G Mammalia 06 F Aves 06 G Mammalia 06 F Aves 07 F Aves	07		01	
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General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders A Protochordata B Agnatha C Pisces D Amphibia E Reptilia F Aves G Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals D Osteology- Fowl and Rabbit excluding loose O 3 O 3 O 3 O 4 O 5 O 5 O 5 O 6 O 7 O 8 O 7 O 7 O 8 O 7 O 8 O 8	Sr. No.	Topic to be covered Taxonomy of Chordata	Lectures Available	Lectures Utilized
order of the following chordate as per availability in the laboratory from the major orders A Protochordata B Agnatha C Pisces D Amphibia E Reptilia F Aves O6 G Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose O3 O3 O3 O3 O6 O7 O7 O7 O7 O7 O7 O7 O7 O7	Sr. No.	Topic to be covered Taxonomy of Chordata General characters and classification of	Lectures Available	Lectures Utilized
availability in the laboratory from the major orders A Protochordata B Agnatha 03 C Pisces 06 D Amphibia 06 E Reptilia 06 F Aves 06 G Mammalia 06 Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, Rat or mouse or Rabbit – digestive system, Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No.	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata	Lectures Available	Lectures Utilized
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A Protochordata B Agnatha 03 C Pisces 06 D Amphibia 06 E Reptilia 06 F Aves 06 G Mammalia 06 Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals D Osteology- Fowl and Rabbit excluding loose 06 07 08 09 09 09 00 00 00 00 00 00	Sr. No. A	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per	Lectures Available 75	Lectures Utilized
B Agnatha 03 C Pisces 06 D Amphibia 06 E Reptilia 06 F Aves 06 G Mammalia 06 Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals D Osteology- Fowl and Rabbit excluding loose	Sr. No. A	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major	Lectures Available 75	Lectures Utilized
C Pisces 06 D Amphibia 06 E Reptilia 06 F Aves 06 G Mammalia 06 Anatomical study through computer aided B techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals O Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders	Lectures Available 75	Lectures Utilized
D Amphibia 06 E Reptilia 06 F Aves 06 G Mammalia 06 Anatomical study through computer aided B techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals O Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata	Lectures Available 75 03	Lectures Utilized
E Reptilia 06 F Aves 06 G Mammalia 06 Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha	Lectures Available 75 03	Lectures Utilized
F Aves 06 G Mammalia 06 Anatomical study through computer aided B techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose O6 O7 O7 O7 O7 O7 O7 O7 O7 O7	Sr. No. A 1 2 A B C	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces	Lectures Available 75 03 03 06	Lectures Utilized
G Mammalia 06 Anatomical study through computer aided B techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose O6 O7 O7 O7 O7 O7 O7 O7 O7 O7	Sr. No. A 1 2 A B C D	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia	03 03 06 06	Lectures Utilized
Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B C D E	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia	03 06 06 06	Lectures Utilized
B techniques, video clippings, Models, photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B C D E F	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves	03 06 06 06 06	Lectures Utilized
photographs and other available resources 1 Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose 06 07 08 09 09 09 09 09 09 09 09 09	Sr. No. A 1 2 A B C D E F	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia	03 06 06 06 06	Lectures Utilized
Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B C D E F G	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided	03 06 06 06 06	Lectures Utilized
female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B C D E F G	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models,	03 06 06 06 06	Lectures Utilized
Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B C D E F G	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources	03 06 06 06 06	Lectures Utilized
2 arterial system, venous system and reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose O6	Sr. No. A 1 2 A B C D E F G B	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and	03 03 06 06 06 06 06	Lectures Utilized
reproductive systems C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose 06	Sr. No. A 1 2 A B C D E F G B	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system	03 03 06 06 06 06 06	Lectures Utilized
C Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose 06	Sr. No. A 1 2 A B C D E F G B	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system,	Lectures Available 75 03 06 06 06 06 06 06 06	Lectures Utilized
available mammals Osteology- Fowl and Rabbit excluding loose 06	Sr. No. A 1 2 A B C D E F G B	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and	Lectures Available 75 03 06 06 06 06 06 06 06	Lectures Utilized
Osteology- Fowl and Rabbit excluding loose Osteology- Fowl and Rabbit excluding loose	Sr. No. A 1 2 A B C D E F G B	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems	Lectures Available 75 03 06 06 06 06 06 06 06	Lectures Utilized
	Sr. No. A 1 2 A B C D E F G B 1	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally	Lectures Available 75 03 06 06 06 06 06 06 06	Lectures Utilized
bones of skull	Sr. No. A 1 2 A B C D E F G B 1	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals	Lectures Available 75 03 06 06 06 06 06 06 06	Lectures Utilized
	Sr. No. A 1 2 A B C D E F G B 1 2 C	Topic to be covered Taxonomy of Chordata General characters and classification of phylum chordata General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems Slides of hair impression of different locally available mammals Osteology- Fowl and Rabbit excluding loose	Lectures Available 75	Lectures Utilized

Е	Evolution		
1	Study of fossils and living fossils	03	
	Study of evidences of evolution	03	
2	-	02	
I	analogous and homologous organ	03	
Ii	Connecting links – peripatus, Archeopteryx,	03	
	Echidna, Duckbill, Platypus		
3	Mimicry- coloration in animals through	03	
	available examples in laboratory	0.5	
	Beak and leg modification with reference to		
4	parrot, woodpeacker, kingfisher, heron, duck,	03	
	sparrow or pigeon, hawk or kite, owl.		
F	Histological slides		
i	amphioxus- T.S. Oral Hood, pharynx and tail.	03	
Ii	Frog- T.S. Lung, Stomach, Kidney, intestine	03	
Teaching	Plan for Theory (Fourth Semester)	Class : B Sc Part II	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	UNIT 2 : Linkage	15	
	Linkage: Types of linkage, linkage group,		
01	arrangement of linked genes and significance	04	
	of linkage		
02	Crossing Over- Types	03	
03	Mechanism of Crossing over	01	
04	Theories of crossing over	02	
	Factors influencing the crossing over and		
05	significance of crossing over	02	
	Multiple alleles in relation to eye colour in		
06	Drosophila, blood group in man,	03	
00	Erythroblastosis foetalis	03	
	UNIT 4 : Genetic screening and parental		
	diagnosis	15	
	Prenatal test, carrier, Chronic villus sampling,		
01	Amniocentesis	03	
02	Gene probe and DNA Analysis	04	
02	Genes and human heredity: Inheritance of eye	04	
02		03	
02	colour, inheritance of skin colour, Recessive genes and consanguineous marriages	03	
03	Genetic counseling: Risk of marriages in affected family, Birth control measures (Male	03	
03		03	
0.4	and Female) Kinds of twines	02	
04			
	Plan for Practical (Fourth Semester)	Class: B Sc Part II	T . TT.:1: 1
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Advanced Genetics and Animal Ecology	84	
A	Genetic Experiment	02	
1	Recording of mendelian traits in man	03	
2	Detection of monohybrid and dihybrid cross	06	
	with the help of plastic beads		
	Culturing drosophila using standard methods		
3	- drosophila male and female identification,	06	
	mutant forms (from pictures)		
4	Demonstration of bar bodies	03	
5	Preparation of human karyotypes from Xerox	03	
	pictures	03	
6	Photoslides for turner syndrome, klienfelters	03	
U	syndrome, downs syndrome	0.5	
7	Detection of syndrome from chromosome	03	
	spread pictures	03	
	Study of following human genetic traits and		
		1	1
8	application of hardy Weinberg principle to	03	
8	application of hardy Weinberg principle to them	03	
8 I		03	

	attached and free earlobes, rolling of tongue,		
	PTC test and other notable traits		
В	Ecology		
	a) Use of ph meter for estimation of ph		
1	in soil sample	06	
1	Use of ph meter for estimation of ph in water	00	
	sample		
2	Study of Chemical parameters of water	03	
A	Estimation of dissolved oxygen	03	
В	Estimation of Salinity	03	
C	Estimation of Free CO2, Carbonate and	0.2	
C	bicarbonate	03	
D	Estimation of Calcium and hardness of water	03	
	Adaptation of aquatic and terrestrial animals		
3	based on study of museum specimen	03	
	Study of natural ecosystem and field report of		
4	the visit	03	
5	Field collection methods	03	
3	Identification of common animals – soil	0.5	
	invertebrate diversity, diversity of birds and		
6	mammals in parks/ botanical gardens, threats	06	
	to local diversity		
	Construction of food web diagram based on		
7	the field visit	03	
8	Mounting of plankton	03	
9	Qualitative analysis of fresh water plankton	03	
C	General	03	
	Visit to a national park or sanctuaries and		
1	submission of report	03	
Teaching		Class : B Sc Part III	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
51.110.	UNIT 1: Respiration and Circulation	15	Lectures etimzed
01	Structure of respiratory organs	02	
02	Mechanism of respiration	02	
03		02	
0.5	Dogniratory nigment	01	
	Respiratory pigment	01	
04	Transport of gases	O2	
04 05	Transport of gases Neurophysiological control of respiration	O2 02	
04 05 06	Transport of gases Neurophysiological control of respiration Blood	O2 02 02	
04 05 06 07	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood	O2 02 02 02 01	
04 05 06 07 08	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor	O2 02 02 01 01	
04 05 06 07 08 09	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart	O2 02 02 01 01 01	
04 05 06 07 08 09 Teaching	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester)	02 02 02 01 01 02 Class: B Sc Part III	
04 05 06 07 08 09	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered	02 02 02 01 01 01 02 Class: B Sc Part III Lectures Available	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No.	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No.	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No.	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No.	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer.	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07 08	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch Qualitative detection of nitrogenous waste	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07 08	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch Qualitative detection of nitrogenous waste products (Ammonia urea, uric acid) in given sample.	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07 08	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch Qualitative detection of nitrogenous waste products (Ammonia urea, uric acid) in given sample.	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07 08 09	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch Qualitative detection of nitrogenous waste products (Ammonia urea, uric acid) in given sample. Demonstration of kymograph unit,	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07 08	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch Qualitative detection of nitrogenous waste products (Ammonia urea, uric acid) in given sample. Demonstration of kymograph unit, Respirometer through available resources. Observation and identification of Insect Pests	O2	Lectures Utilized
04 05 06 07 08 09 Teaching Sr. No. 01 02 03 04 05 06 07 08 09	Transport of gases Neurophysiological control of respiration Blood Coagulation of blood Blood group: ABO system and Rh-factor Heart Plan for Practical (Fifth Semester) Topic to be covered Animal physiology and Economic Zoology Detection of blood group in human being Differential count of blood Estimation of hemoglobin percentage with the help of haemometer. R. B. C. Count W. B. C. count Preparation of haemin crystals Measurement of blood pressure Action of salivary amylase on starch Qualitative detection of nitrogenous waste products (Ammonia urea, uric acid) in given sample. Demonstration of kymograph unit, Respirometer through available resources.	O2	Lectures Utilized

UNIT 2 : DNA Replication 15 01 Types of replication 02 Semi conservative method 03 Experiment by Messelson and Stahl 04 Concept of gene 05 One gene one enzyme hypothesis 06 One gene one Polypeptide theory 07 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes	etures Utilized
Nervous system, Different type of muscles, endocrine gland, testis and ovary. 14 Study of locally available fishes, Indian major carp, common carp and Exotic Carp Teaching Plan for Theory(Sixth Semester) Sr. No. Topic to be covered Lectures Available Lec UNIT 2: DNA Replication 15 01 Types of replication 02 Semi conservative method 03 Experiment by Messelson and Stahl 04 Concept of gene 05 One gene one enzyme hypothesis 06 One gene one Polypeptide theory A brief account of concept and action of cistron split genes, overlapping genes and jumping genes	tures Utilized
Nervous system, Different type of muscles, endocrine gland, testis and ovary. Study of locally available fishes, Indian major carp, common carp and Exotic Carp 06	tures Utilized
Study of locally available fishes, Indian major carp, common carp and Exotic Carp O6	etures Utilized
Study of locally available fishes, Indian major carp, common carp and Exotic Carp O6	ctures Utilized
Teaching Plan for Theory(Sixth Semester) Sr. No. Topic to be covered UNIT 2: DNA Replication 15 01 Types of replication 02 Semi conservative method 03 Experiment by Messelson and Stahl 04 Concept of gene 05 One gene one enzyme hypothesis 06 One gene one Polypeptide theory A brief account of concept and action of cistron split genes, overlapping genes and jumping genes	ctures Utilized
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Sr. No.Topic to be coveredLectures AvailableLecUNIT 2 : DNA Replication1501Types of replication0202Semi conservative method0303Experiment by Messelson and Stahl0104Concept of gene0105One gene one enzyme hypothesis0206One gene one Polypeptide theory02A brief account of concept and action of cistron split genes, overlapping genes and jumping genes03	tures Utilized
Sr. No.Topic to be coveredLectures AvailableLecUNIT 2 : DNA Replication1501Types of replication0202Semi conservative method0303Experiment by Messelson and Stahl0104Concept of gene0105One gene one enzyme hypothesis0206One gene one Polypeptide theory02A brief account of concept and action of cistron split genes, overlapping genes and jumping genes03	etures Utilized
UNIT 2 : DNA Replication 15 01 Types of replication 02 02 Semi conservative method 03 03 Experiment by Messelson and Stahl 01 04 Concept of gene 01 05 One gene one enzyme hypothesis 02 06 One gene one Polypeptide theory 02 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	Autres offinzed
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02 Semi conservative method 03 03 Experiment by Messelson and Stahl 01 04 Concept of gene 01 05 One gene one enzyme hypothesis 02 06 One gene one Polypeptide theory 02 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	
03 Experiment by Messelson and Stahl 01 04 Concept of gene 01 05 One gene one enzyme hypothesis 02 06 One gene one Polypeptide theory 02 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	
04 Concept of gene 01 05 One gene one enzyme hypothesis 02 06 One gene one Polypeptide theory 02 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	
05 One gene one enzyme hypothesis 02 06 One gene one Polypeptide theory 02 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	
06 One gene one Polypeptide theory 02 A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	
A brief account of concept and action of cistron split genes, overlapping genes and jumping genes 03	
07 cistron split genes, overlapping genes and jumping genes 03	
jumping genes	
jumping genes	
08 Genetic diseases : Spinocerebellar ataxia 01	
Teaching Plan for Practical (Sixth Semester) Class: B Sc III	
	tures Utilized
Molecular Biology and Biotechnology 93	tares etimeea
01 Micro technique scope and importance 03	
Preparation of fixative- alcohol, acetone,	
sublimate	
Collection of various tissues/ organs from	
slaughter house for micro-technique	
Preparation of Alcohol grades, dehydration 06	
and clearing of tissues	
05 Use and care of Oven 03	
Embedding and block making, trimming of 12	
block.	
07 Use and care of different types of Microtome 03	
08 Honing and stropping Knives 03	
09 Section cutting and spreading 03	
Preparation of various stains-Borax carmine	
10 Acetocarmine, Aceto-orcein, Haematoxyline, 06	
eosin	
Staining of the sections (Double staining)	
11 Staining of the sections, (Bouble staining), Mounting	
12 Camera Lucida. Use and Drawings 09	
Oculomicrometer scale/ similar micro-	
13 Octionicronieter scale/ similar inicro- measurements use 06	
Introduction to models of PCR, Southern 06	
blotting through available resources	
Vital Staining of mitochondria by using Janus, 06	
Green B stain	
Extraction of DNA by using salt, detergent	
16 and enzymes from natural sources from any 06	
animal tissue / plant material	

Period	PRACTICAL	1	2	3	4	PRACTICAL
Day /	08.00 to	11:00 to	11:48 to	12:36 to	1:34 to	2:30 to 4.54
Time	10.24	11:48	12:36	1:24	2:22	2.30 10 4.34
MON						III (Pr.)
TUE	III (Pr.)	II (Th.)				
WED	I (Pr.)	III (Th.)				
THUS						I (Pr.)
FRI	II (Pr.)			I (Th.)		
					Practical	Practical
		7.30 to	8.18 to	9.06 to	10.04 -	12.28 to 2.52
		8.18	9.06	9.54 am	12.28 pm	pm
SAT		III (Th.)			II (Pr.)	

Allotted Workload

Subject: Zoology Year: 2021-22

Sr. No.	Class	No. of period	s per week		
Sr. No.	Class	Lectures (L)	Practical (P)		
1	B. Sc I	01	06		
2	B. Sc II	01	06		
3	B. Sc III	02	06		

Total Workload per week (L+P): 04 (L) + 18(P) = 22 (17 hrs. and 36 min.)

Teaching Periods Available per month during the Session 2021-22

Faculty: Science Subject: Zoology

Name of Faculty: Mr. S. D. Deshmukh

			ODD SEMESTER					EVEN SEMESTER				
Class	Periods	SEPT -21	OCT -21	NOV -21	DEC -21	JA N- 22	Total	FEB -22	MA R-22	APR - 22	MAY -22	Total
B Sc.	Theory	00	04	02	05	01	12	03	03	04	04	14
I	Practica 1	06	21	18	30	12	87	18	30	21	24	93
B.	Theory	01	03	04	04	02	14	03	04	04	04	15
Sc. II	Practica 1	00	24	21	24	12	71	15	21	24	24	84
BSc.	Theory	01	07	06	08	05	27	05	09	08	08	30
III	Practica 1	06	21	24	24	12	87	21	24	24	24	93

Teachin	g Plan for Theory (First Semester)	Class: B. Sc. Part I	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	Life And Diversity Of Nonchordates	12	
	Unit III Platyhelminthes		
1	Type study: Fasciola hepatica: Habits and habitat,	01	

	External features,		
2	Digestive and Excretory System	01	
3	Reproductive system	01	
4	Life cycle	02	
4	Phylum Aschelminthes: General Characters.	02	
5		01	
6	Type study, Ascaris lumbricoides: Habits and habitat, External features,	01	
7	Digestive and Excretory system	02	
8	Reproductive system	01	
9	Life cycle	02	
		\ <u>-</u>	
Teachin	g Plan for Practical (First Semester)	Class : B. Sc Part I	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
2212121	Life And Diversity Of Nonchordates	87	
	Observation, classification up to classes and	01	
1	sketching of following animals		
	Phylum Protozoa	3	
	Phylum Porifera	3	
	Phylum Coelenterata	6	
	Phylum Helminthes	3	
	Phylum Annelida	6	
		9	
	Phylum Arthropoda		
	Phylum Mollusca	9	
	Phylum Echinodermata	6	
	Phylum Hemichordata	3	
2	Permanent slide study	12	
	Anatomical study through computer aided	1.2	
3	techniques, video clippings, photographs and	15	
	other available resources		
4	Mountings	12	
	g Plan for Theory (Second Semester)	Class: B. Sc. Part I	* *****
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	CELL AND DEVELOPMENTAL BIOLOGY		
	UNIT-IV		
1	Mitosis and its significance	03	
2	Meiosis and its significance.	04	
3	Gametogenesis: Spermatogenesis and oogenesis	03	
4	Fertilization: Types of fertilization, Mechanism of	04	
-	fertilization,		
TD 1:	D 6 4 1/G 1 G 4	CI DC D 4 I	
	g Plan for practical (Second Semester)	Class: B Sc. Part I	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
1	Cell Biology	39	
	Use care and maintenance of microscope	3	
	Bacterial culture and gram staining	3	
	Permeability test using erythrocytes	6	
	Preparation of Polytene chromosome in	9	
	Chironomous or drosophila larvae		
	Preparation of various stages of mitosis in	9	
	onion root tips		
	Preparation of various stages of meiosis in	9	
	insect testes		
2	Developmental Biology	54	
	Study of stages of gametogenesis in rat or frog	6	
1	Study different types of animal eggs	9	

		1	T
	Study of developmental stages (life cycle) of	9	
	Cockroach, Housefly, Butterfly, Moth, Frog	,	
	Demonstration of developing chick through	0	
	available resources	9	
	Developmental stages of frog	6	
	Permanent slides of chick embryos at		
	24,36,48,72hrs of incubation	9	
	Study of different types of placenta with		
		6	
7D 1 1	suitable histogical Slides or visual diagram		
	g Plan for Theory (Third Semester)	Class: B Sc. Part II	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	LIFE AND DIVERSITY OF CHORDATE AND	12	
	CONCEPT OF EVOLUTION		
	Unit-V Evolutionary Processes		
	Natural selection:		
1	Darwinism. And Lamarckinsm.	03	
	Speciation - definition of species –mode of		
	speciation –		
2	Allopatric and Sympatric speciation.	04	
_	Modern concept of organic evolution-Neo	, .	
	Darwinism.		
	Population Genetic :Hardy –Weinberg equilibrium,		
3	Gene	04	
	pool, Gene frequency, Genetic drift,		
	C P:		
4	Convergent, Divergent and Parallel evolution, Coevolution	03	
/D1-2		Classe D.C. David II	
	g Plan for Practical (Third Semester)	Class: B Sc. Part II	T / TT/'1' 1
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND		Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION	Lectures Available	Lectures Utilized
	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate	Lectures Available	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum	Lectures Available	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate	Lectures Available	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to	Lectures Available 75	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate	Lectures Available	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to	Lectures Available 75	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per	Lectures Available 75	Lectures Utilized
Sr. No.	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major	Lectures Available 75	Lectures Utilized
Sr. No. A 1	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata	Lectures Available 75 3	Lectures Utilized
Sr. No. A 1 2	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha	Lectures Available 75 3	Lectures Utilized
Sr. No. A 1 2 a b c	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces	Lectures Available 75 3 6	Lectures Utilized
Sr. No. A 1 2 a b c d	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia	Lectures Available 75 3 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia	3 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves	3 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia	3 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided	3 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models,	3 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources	3 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and	3 6 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system	3 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and	3 6 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system	3 6 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and	3 3 6 6 6 6 6 6 3	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and reproductive systems	3 3 6 6 6 6 6 6 6	Lectures Utilized
Sr. No. A 1 2 a b c d e f G B	Topic to be covered LIFE AND DIVERSITY OF CHORDATE AND CONCEPT OF EVOLUTION Taxonomy of Chordate General characters and classification of phylum chordate General characters and classification up to order of the following chordate as per availability in the laboratory from the major orders Protochordata Agnatha Pisces Amphibia Reptilia Aves Mammalia Anatomical study through computer aided techniques, video clippings, Models, photographs and other available resources Frog- viscera, digestive system, male and female reproductive system Rat or mouse or Rabbit – digestive system, arterial system, venous system and	3 3 6 6 6 6 6 6 3	Lectures Utilized

-			
D	Osteology- Fowl and Rabbit excluding loose	6	
	bones of skull	-	
Е	Evolution		
1	Study of fossils and living fossils	3	
2	Study of evidences of evolution		
3	analogous and homologous organ	3	
4	Connecting links – Peripatus, Archaeopteryx,	3	
	Echidna, Duckbill, Platypus	3	
5	Mimicry- coloration in animals through	3	
	available examples in laboratory	3	
4	Beak and leg modification with reference to		
	parrot, woodpecker, kingfisher, heron, duck,	3	
	sparrow or pigeon, hawk or kite, owl.		
F	Histological slides		
i	Amphioxus- T.S. Oral Hood, pharynx and tail.	3	
ii	Frog- T.S. Lung, Stomach, Kidney, intestine	3	
	g Plan for Theory (Fourth Semester)	Class: B Sc. Part II	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
D1. 110.	ADVANCED GENETICS AND ANIMAL		Ecctares etimeca
	ECOLOGY	15	
	Unit VI Ecosystem		
	Relationship between habitat and ecological		
1	niche - Autotrophic and heterotrophic producer,	03	
	consumer.		
2	trophic level - energy flow in an ecosystem - food	02	
	chain -	02	
3	Food web - pyramids - Ecotypes. Homeostasis of	02	
	ecosystem.	02	
	Terrestrial ecosystem: Classification and Biomes,		
4	Aquatic	03	
	ecosystem: Fresh water ecosystem-Lentic and lotic		
	ecosystem, Marine ecosystem: Characteristics, salinity,		
5	temperature -	03	
3	pressure, zonation and stratification	05	
	Estuarine ecology:	0.2	
6	Characteristics types, fauna and their adaptations.	02	
Teachin	g Plan for Practical (Fourth Semester)	Class: B. Sc Part II	
Sr. No.	Topics to be covered	Lectures available	Lectures Utilized
	ADVANCED GENETICS AND ANIMAL	0.4	
	ECOLOGY	84	
A	Genetic Experiment		
1	Recording of Mendelian traits in man	3	
2	Detection of monohybrid and dihybrid cross with	6	
	the help of plastic beads	Ü	
	Culturing drosophila using standard methods –		
3	drosophila male and female identification, mutant	6	
	forms (from pictures)		
4	Demonstration of bar bodies	3	
5	Preparation of human karyotypes from Xerox	3	
	Photo slides for turner's syndrome klienfalter's		
6	Photo slides for turner's syndrome, klienfelter's syndrome, downs syndrome	3	
	Detection of syndrome from chromosome spread		
7	pictures	3	
	Study of following human genetic traits and		
8	application of hardy Weinberg principle to them	3	
•	Baldness, length of index and ring finger, attached		
I	and free earlobes, rolling of tongue, PTC test and	6	
		•	

	.4		
	other notable traits		
В	Ecology		
	a) Use of pH meter for estimation of pH in soil		
1	sample	6	
	b) Use of pH meter for estimation of pH in water		
	sample	2	
2	Study of Chemical parameters of water	3	
A	Estimation of dissolved oxygen	3	
В	Estimation of Salinity	3	
C	Estimation of Free CO2, Carbonate and bicarbonate	3	
D	Estimation of Calcium and hardness of water	3	
3	Adaptation of aquatic and terrestrial animals based	3	
3	on study of museum specimen	3	
4	Study of natural ecosystem and field report of the	3	
4	visit	3	
5	Field collection methods	3	
	Identification of common animals – soil invertebrate		
6	diversity, diversity of birds and mammals in parks/	6	
	botanical gardens, threats to local diversity		
7	Construction of food web diagram based on the field	3	
,	visit	3	
8	Mounting of plankton	3	
9	Qualitative analysis of fresh water plankton	3	
С	General		
1	Visit to a national park or sanctuaries and	2	
1	submission of report	3	
Teachin	g Plan for Theory (Fifth Semester)	Class: B. Sc. Part III	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	ANIMAL PHYSIOLOGY AND		
		27	
1	ECONOMIC ZOOLOGY		
	ECONOMIC ZOOLOGY Unit-III Nerve Physiology:		
	Unit-III Nerve Physiology:		
1	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron		
1	Unit-III Nerve Physiology:	02	
1	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron andTypes: Myelinated and non-Myelinated nerve fibres.		
1 2	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron andTypes: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential,		
	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron andTypes: Myelinated and non-Myelinated nerve fibres.	02	
	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron andTypes: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential,	02	
	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA,	02	
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2	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones	02 03 02	
2	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-	02 03 02	
2	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of	02 03 02	
3 4	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's,	02 03 02 02	
3 4	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's, Hormonal disorders: Dwarfism, Gigantism,	02 03 02 02	
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2 3 4 5	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's, Hormonal disorders: Dwarfism, Gigantism, Acromegaly, Goiter, Myxoedema, Cretinism, Osteoporosis,	02 03 02 02 05	
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2 3 4 5	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's, Hormonal disorders: Dwarfism, Gigantism, Acromegaly, Goiter, Myxoedema, Cretinism, Osteoporosis, Unit-VI Aquaculture definition, scope, importance and present status in India.	02 03 02 02 05	
2 3 4 5	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's, Hormonal disorders: Dwarfism, Gigantism, Acromegaly, Goiter, Myxoedema, Cretinism, Osteoporosis, Unit-VI Aquaculture definition, scope, importance and present status in India. Fresh water fish culture: types of fish	02 03 02 02 05	
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2 3 4 5	Unit-III Nerve Physiology: Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's, Hormonal disorders: Dwarfism, Gigantism, Acromegaly, Goiter, Myxoedema, Cretinism, Osteoporosis, Unit-VI Aquaculture definition, scope, importance and present status in India. Fresh water fish culture: types of fish	02 03 02 02 05	
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2 3 4 5	Neuron: E.M. Structure of nuron and Types: Myelinated and non-Myelinated nerve fibres. Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's, Hormonal disorders: Dwarfism, Gigantism, Acromegaly, Goiter, Myxoedema, Cretinism, Osteoporosis, Unit-VI Aquaculture definition, scope, importance and present status in India. Fresh water fish culture: types of fish ponds: Nursary, rearing and stocking, design and construction of fish pond, fertilizers	02 03 02 02 05	

	CIFE, Mumbai,		
	hatching model, Induced breeding and		
4	hypophysation, Modern drugs used in fish breeding.	03	
	Freshwater system: monoculture, polyculture,		
5	integrated aquaculture, cage culture, pen culture	03	
	Fish products and		
6	byproducts: Fish liver Oil, Fish body oil, Fish	01	
	manure, Fish leather	O1	
7	11011010) 1 1011101		
	g Plan for Practical (Fifth Semester)	Class: BSc. Part III	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
D1. 110.	Animal physiology and Economic zoology	87	Lectures etinzed
1	Detection of blood group in human being	6	
2	Differential count of blood	6	
		U	
3	Estimation of hemoglobin percentage with the help	6	
	of haemometer.		
4	R. B. C. Count	6	
5	W. B. C. count	6	
6	Preparation of haemin crystals	6	
7	Measurement of blood pressure	6	
8	Action of salivary amylase on starch	6	
0	Qualitative detection of nitrogenous waste products	(
9	(Ammonia, urea, uric acid) in given sample.	6	
10	Demonstration of kymograph unit, Respirometer	6	
10	through available resources.	U	
11	Observation and identification of Insect Pests of	6	
11	local crops, and predator insects.	0	
12	Life cycle of honey bee, Lac Insect, silk moth	6	
	Histological slides of major organs of respiratory		
13	system, circulatory system, Nervous system,	9	
13	Different type of muscles, endocrine gland, testis		
	and ovary.		
14	Study of locally available fishes, Indian major carp,	6	
	common carp and Exotic Carp		
	g Plan for Theory (Sixth Semester)	Class: B. Sc. III	
Sr. No.	Topics to be covered	Lectures Available	Lectures Utilized
	MOLECULAR BIOLOGY &	30	
	BIOTECHNOLOGY		
	Unit III		
1	Genetic code and its features,	03	
_	Protein synthesis transcription and processing of		
2	mRNA, translation-different	05	
	steps		
3	Gene regulation: (promoter and operator), Operon	04	
	models, and Lac-operon model of E.Coli.		
4	Genetic regulation	03	
	in Eukaryotes-Britten Davidson Model. Unit IV		
	Mutation: Definition-mutation theory of DeVries		
	different types of mutations, - molecular basis of mutation: substitution and frameshift mutations,		
1	chromosomal aberrations structural (deletion,	06	
	addition, inversion and		
	translocation), numerical (euploidy and aneuploidy).		
_	Natural and induced mutations-significance of		
2	mutations.	03	
3	DNA repair process.	02	
	Polymerase chain reaction (PCR). Southern,		
4	Northern and Western blotting techniques, DNA	04	

	finger printing.		
Teachin	g Plan for Practical (Sixth Semester)	Class : B. Sc. Part	III
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	MOLECULAR BIOLOGY & BIOTECHNOLOGY	93	
1	Micro technique scope and importance	3	
2	Preparation of fixative- alcohol, acetone, formalin, Bouin's fluid, Cornoy fluid, Formal sublimate	6	
3	Collection of various tissues/ organs from slaughter house for micro-technique	3	
4	Preparation of Alcohol grades, dehydration and clearing of tissues	6	
5	Use and care of Oven	3	
6	Embedding and block making, trimming of block.	12	
7	Use and care of different types of Microtome	3	
8	Honing and stropping Knives	3	
9	Section cutting and spreading	3	
10	Preparation of various stains-Borax carmine Acetocarmine, Aceto-orcein, Haematoxyline, eosin	6	
11	Staining of the sections, (Double staining), Mounting	12	
12	Camera Lucida. Use and Drawings	9	
13	Oculomicrometer scale/ similar micromeasurements use	6	
14	Introduction to models of PCR, Southern blotting through available resources	6	
15	Vital Staining of mitochondria by using Janus, Green B stain	6	
16	Extraction of DNA by using salt, detergent and enzymes from natural sources from any animal tissue / plant material	6	



SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S **ARTS & COMMERCE COLLEGE** WARVAT BAKAL DIST- BULDANA **DEPARTMENT OF PHYSICS** DEPRTMENTAL ACADEMIC CALENDAR 2021-22

Departmental Academic Calendar (2021-22)

Departmental Academic Calendar (2021-22)	Der	partmental	Academic	Calendar ((2021-22)	
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Departn					
Sr. No.	Activity	Commencement	Cessation	Total	Days
01	First Session	30/08/2021	15/01/2022	10)5
02	Admission Process	01/09/2021	18/09/2021	1	4
	Teaching Days (Odd	27/09/2021	30/10/2021	26	
03	Semesters)	08/11/2021	15/01/2022	57 8	
04	Induction Program for First Year Students	20/09/2021	25/09/2021	0	6
05	First Term Vacation	01/11/2021	06/11/2021	0	6
06	Summer 2022 Examination	27/01/2022	05/02/2022	1	9
07	Second Session	17/01/2022	31/05/2022	10)9
08	Teaching Days (Even Semesters)	07/02/2022	31/05/2022	9	0
08	Second Term Vacation	01/06/2022	30/06/2022	2	6
09	Even Semesters University ExmWinter 2022	01/06/2022	01/06/2022	30	
10	Commencement of next Academic session		01/07/2022		
Sr. No.	Public H	[oliday	Day & I)ate	
01	Ganesh Chaturthi	Friday, 10 th Septem			
02	Gauri Pujan				1
03					
	Mahatma Gandhi Jayant	i	- Saturday, UZ ^m Octor	er. zuz i	
04	Mahatma Gandhi Jayant Sarypitri Amayasya	i	Saturday, 02 th Octob Wednesday, 06 th Oc		21
04 05	Sarvpitri Amavasya	i	Wednesday, 06th Oc	tober, 202	21
04 05 06	· ·	i	Wednesday, 06 th October Friday, 15 th October	tober, 2021	21
05	Sarvpitri Amavasya Dasara	i	Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th Octob	tober, 2021 er, 2021	21
05 06	Sarvpitri Amavasya Dasara Eid A Milad	i	Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th Octob Friday, 19 th Noveml	etober, 2021 er, 2021 er, 2021 ber, 2021	
05 06 07	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti	i	Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th Octob	etober, 2021 er, 2021 er, 2021 ber, 2021 mber, 202	
05 06 07 08	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas	i	Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th October Friday, 19 th November Saturday, 25 th Dece	etober, 2021 er, 2021 er, 2021 ber, 2021 mber, 2022	21
05 06 07 08 09	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti		Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th Novemb Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru	etober, 2021 eer, 2021 eer, 2021 mber, 2021 mber, 2022 nuary, 2022	21
05 06 07 08 09 10	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti Republic Day		Wednesday, 06 th Oc Friday, 15 th October Tuesday, 19 th October Friday, 19 th November Saturday, 25 th Decee Friday, 14 th January Wednesday, 26 th January Wednesday, 19 th February Tuesday, 01 st March	etober, 2021 eer, 2021 eer, 2021 mber, 2021 mber, 2022 nuary, 2022 nuary, 2022 n, 2022	21
05 06 07 08 09 10	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah		Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th Novemb Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru	etober, 2021 eer, 2021 eer, 2021 mber, 2021 mber, 2022 nuary, 2022 nuary, 2022 n, 2022	21
05 06 07 08 09 10 11 12	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa	araj Jayanti	Wednesday, 06 th Oc Friday, 15 th October Tuesday, 19 th October Friday, 19 th November Saturday, 25 th Decee Friday, 14 th January Wednesday, 26 th January Wednesday, 19 th February Tuesday, 01 st March	tober, 2021 er, 2021 er, 2021 mber, 2021 mber, 2022 nuary, 2022 nuary, 2022 11, 2022 2022	21
05 06 07 08 09 10 11 12 13	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day)	araj Jayanti	Wednesday, 06 th October Friday, 15 th October Tuesday, 19 th November Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March,	etober, 2021 per, 2021 per, 2021 per, 2021 mber, 2022 nuary, 2022 nuary, 2022 2022 1, 2022	21
05 06 07 08 09 10 11 12 13	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa Dr. Babasaheb Ambedka	araj Jayanti	Wednesday, 06 th Oc Friday, 15 th October Tuesday, 19 th October Friday, 19 th November Saturday, 25 th Decee Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th February Tuesday, 01 st March Friday, 18 th March, Saturday, 02 nd April	etober, 2021 per, 2021 per, 2021 per, 2021 mber, 2022 nuary, 2022 nuary, 2022 2022 1, 2022 1, 2022	21
05 06 07 08 09 10 11 12 13 14 15	Sarvpitri Amavasya Dasara Eid A Milad Gurunanak Jayanti Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa Dr. Babasaheb Ambedka Jayanti	araj Jayanti ar Jayanti / Mahavir	Wednesday, 06 th Oc Friday, 15 th October Tuesday, 19 th Noveml Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March, Saturday, 02 nd April	etober, 2021 eer, 2021 eer, 2021 eer, 2021 mber, 2022 nuary, 2022 nuary, 2022 1, 2022 1, 2022 1, 2022 1, 2022	21

Mr. Vishal R. Wankhade
Faculty: Science

Fa	culty: Science		Subject: Physics			
Period	1	2	3	4	5	
Day / Time	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	1:34 to 2:22 (P)	2:30 to 4:54 (P)	
MON	T (BSc.I)	T (BSc.II)	T (BSc.III)		P (BSc.III)	
TUE	T (BSc.II)	T (BSc.III)	T (BSc.I)		P (BSc.III)	
WED	T (BSc.II)		T (BSc.I)	T (BSc.III)	P (BSc.I)	
THUS	T (BSc.I)		T (BSc.II)	T (BSc.III)	P (BSc.I)	
FRI	T (BSc.II)	T (BSc.III)	T (BSc.I)		P (BSc.II)	
Day / Time	07:30 To 08.18	08:18To 09:06	09:16 To 10.04	10.04 to 12.28		
SAT	T (BSc.III)	T (BSc.II)	T (BSc.I)	P (BSc.II)		

Allotted Workload

Subject: Physics Year: 2021-2022

Sr. No.	Class	No. o	No. of periods per week		
SI. NO.	Class	Lectures	Tutorials	Practical	Allotted
1	BSc1	06		2 * 3 = 06	
2	BSc2	06		2 * 3 = 06	
3	BSc3	06		2 * 3 = 06	

Total Workload per week (L+P): 18(L) + 18(P) = 36(L)(28.8 hrs.)

Teaching Periods Available per month during the session 2021-2022 Faculty: Science Subject: Physics

Tucu	Odd semester Even semester					-						
		Sep	Oct	Nov	Dec	Jan	Total	Feb	Mar	Apr	May	Total
DC a 1	Theory	04	22	19	26	11	82	17	25	23	24	89
BSc1	Practical	06	21	18	30	06	81	15	30	21	24	90
BSc2	Theory	04	22	19	26	11	82	17	25	23	24	89
	Practical	0	24	15	24	09	72	18	21	24	24	87
BSc3	Theory	04	22	19	26	11	82	17	25	23	24	89
	Practical	06	21	24	24	06	81	18	24	24	24	90

Plan for Theory (First Semester)	Class: BSc Part-I		
Topic to be covered	Lectures Available	Lectures Utilized	
·	l		
Kepler's laws of planetary motion, Newton's law of gravitation, acceleration due gravity, variation with altitude and depth, Gravitational field, Gravitational Potential; Gauss's theorem, gravitational potential and intensity due to uniform solid sphere at a point inside and outside the sphere .Numericals.	14		
Motion of a Rigid body; rotational motion; moment of inertia; Principle of Perpendicular & Parallel axes, Radius of Gyration; M.I of regular shaped bodies like ring, disc, hollow sphere, solid sphere, cylinder & bar about different axes. Linear momentum, angular momentum, Conservation of Linear Momentum & angular momentum Numericals	14		
Linear S.H.M. Angular S.H.M. Differential equations and solutions			
Displacement, Velocity and acceleration, Kinetic and Potential energy .Simple pendulum ,compound pendulum, Kater's Reversible pendulum, Spring and mass system, Vibration of a magnet, bifilar oscillations, Damped and forced harmonic oscillations, Resonance. Numericals.	14		
Interference, superposition of two mutually perpendicular SHM of same Frequency, Lissajous figures. Standing waves, velocity of longitudinal waves (Newton's formula) velocity of waves by Kundt's tube, velocity of transverse waves in stretched string, harmonics and overtones. Production and detection of ultrasonic waves and its	14		
apprentions Aumericais.	L	<u> </u>	
Introduction of Elasticity; Hooke's Law of Elasticity, Three Elastic constants; Relation between, U, s, k and h. Bending of beam and Bending moment; Cantilever, Depression of centrally loaded beam, twisting couple, torsional pendulum; Maxwell's needle .Numerical.	13		
	T	T	
drag, Coefficient of viscosity, equation of continuity; Euler's equation, Bernoulli's theorem, Poiseulle's equation, Reynold's number, Terminal velocity, Stokes' law, Variation of viscosity with temperature. Surface tension, angle of contact and wetting, Jaeger's method Numericals	13		
Plan for Practical (First Semester)			
Topic to be covered	Lectures Available	Lectures Utilized	
 Study of laws of Parallel and perpendiculars axes for moment of inertia. Determination of coefficient of restitution for inelastic collision. Moment of inertia of fly wheel. Study of compound pendulum. To determine moment of inertia of a body using bifilar suspension. Modulus of rigidity by Torsional Pendulum. Acceleration due to gravity by Kater's pendulum. Study of Oscillations of mass under different combinations of springs. Young's modulus by cantilever. Young's Modulus by bending of beam. 	81		
	Kepler's laws of planetary motion, Newton's law of gravitation, acceleration due gravity, variation with altitude and depth, Gravitational field, Gravitational Potential; Gauss's theorem, gravitational potential and intensity due to uniform solid sphere at a point inside and outside the sphere .Numericals. Motion of a Rigid body; rotational motion; moment of inertia; Principle of Perpendicular & Parallel axes, Radius of Gyration; M.I of regular shaped bodies like ring, disc, hollow sphere, solid sphere, cylinder & bar about different axes. Linear momentum, angular momentum, Conservation of Linear Momentum & angular momentum Numericals Linear S.H.M., Angular S.H.M., Differential equations and solutions. Displacement, Velocity and acceleration, Kinetic and Potential energy. Simple pendulum, compound pendulum, Kater's Reversible pendulum, Spring and mass system, Vibration of a magnet, bifilar oscillations, Damped and forced harmonic oscillations, Resonance. Numericals. Superposition of two SHM of same frequency along the same line Interference, superposition of two mutually perpendicular SHM of same Frequency, Lissajous figures. Standing waves, velocity of longitudinal waves (Newton's formula)velocity of waves by Kundt's tube, velocity of transverse waves in stretched string, harmonics and overtones. Production and detection of ultrasonic waves and its applications. Numericals. Introduction of Elasticity; Hooke's Law of Elasticity, Three Elastic constants; Relation between, U, s, k and h. Bending of beam and Bending moment; Cantilever, Depression of centrally loaded beam, twisting couple, torsional pendulum; Maxwell's needle .Numerical. Kinematics of moving fluids; Streamline and turbulent flow, viscous drag, Coefficient of viscosity, equation of continuity; Euler's equation, Bernoulli's theorem, Poissulle's equation, Reynold's number, Terminal velocity, Stokes' law, Variation of viscosity with temperature. Surface tension, angle of contact and wetting, Jaeger's method Numericals; Plan for Practical (First S	Kepler's laws of planetary motion, Newton's law of gravitation, acceleration due gravity, variation with altitude and depth, Gravitational field, Gravitational Potential; Gaus's theorem, gravitational potential and intensity due to uniform solid sphere at a point inside and outside the sphere. Numericals. Motion of a Rigid body; rotational motion; moment of inertia; Principle of Perpendicular & Parallel axes, Radius of Gyration; M.I of regular shaped bodies like ring, disc, hollow sphere, solid sphere, cylinder & bar about different axes. Linear momentum, angular momentum, Conservation of Linear Momentum & angular momentum Numericals Linear S.H.M. Angular S.H.M. Differential equations and solutions Displacement, Velocity and acceleration, Kinetic and Potential energy. Simple pendulum, compound pendulum, Kater's Reversible pendulum, Spring and mass system, Vibration of a magnet, bifilar oscillations, Damped and forced harmonic oscillations, Resonance. Numericals. Superposition of two SHM of same frequency along the same line Interference, superposition of two mutually perpendicular SHM of same Frequency, Lissajous figures. Standing waves, velocity of longitudinal waves (Newton's formula) velocity of waves by Kundt's tube, velocity of transverse waves in stretched string, harmonics and overtones. Production and detection of ultrasonic waves and its applications. Numericals. Introduction of Elasticity; Hooke's Law of Elasticity, Three Elastic constants; Relation between, U. s, k and h. Bending of beam and Bending moment; Cantilever, Depression of centrally loaded beam, twisting couple, torsional pendulum; Maxwell's needle. Numerical. Kinematics of moving fluids; Streamline and turbulent flow, viscous drag, Coefficient of viscosity, equation of continuity; Euler's equation, Bernoulli's theorem, Poiseulle's equation, Reynold's number, Terminal velocity, Stokes' law, Variation of viscosity with temperature. Surface tension, angle of contact and wetting, Jaeger's method Numericals Plan for Practica	

Гeaching	Plan for Theory (Third Semester) Class	: BSc Part-2	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
Unit-1	Mathematical background and Elecrostatics	Tivanabic	Ctinizea
	Gradient, divergence and curl of a vector fields and their physical		
	significance, line surface and volume integral. Gauss divergence theorem,		
	Stocks theorem. Work done oncharge in electrostatic field, flux of electric	14	
	field, force onmoving charge, Lorentz force equation and definition of B.		
TT 1. A :	Ampere's force law, Ampere's Law and its applications.		
Unit-2	Magneto statics and Maxwell's Equations Faraday's Law, Integral and differential form of faraday 'slaw,		
	displacement current and Maxwell's Equation, wave Equation satisfied by		
	E and B. Plane electromagnetic wave in vacuum, Pointing vector and	14	
	Pointing theorem.		
Unit-3 :	Solid State Electronics Devices-I		
СШС .	Physics of semiconductors: Introduction to semiconductors; Charge		
	carriers & electrical conduction through semiconductors; Doping, extrinsic		
	semiconductors; Fermi level & energy level diagrams; Drift current in	14	
	semiconductor, mobility, conductivity; Hall effect, Hall coefficient,		
	Semiconductor diode & its biasing, LED, Varactor diode.		
Unit-IV:	Solid State Electronics Devices-II		
	Introduction to BJT; working of BJT; modes of operation; Current gains á		
	and â, their relation; CB & CE characteristics; JFET- construction &		
	working ,characteristics of FET; Basic concept of Difference amplifier, IC-	14	
	OP AMP, electrical parameters of OP AMP, inverting & no inverting		
TT 1. TT	modes; OP AMP as adder, subtractor, differentiator & integrator		
Unit: V:	Special Theory of Relativity	· · · · · · · · · · · · · · · · · · ·	
	Postulates of Special Theory of Relativity, Lorentz transformations, Length	12	
	contraction, Time dilation ,relativistic addition of velocities, relativity of mass, Einstein's Mass - energy relation, Numericals.	13	
I Init: VI ·	Atmosphere and Geophysics		
CIIII. VI.	Structure of earth – The crust, mantle, core. Part of the earth – As a planet;		
	The Atmosphere, The lithosphere, The Hydrosphere Composition of		
	Atmosphere Earthquakes – Causes, terminologies associated with		
	earthquakes. Type of earthquakes scale of intensity, recording of	1.2	
	earthquakes. Radiation in the atmosphere, Propagation of energy through	13	
	vacuum, Intensity of radiation ,Scattering, absorption and reflection of solar		
	radiation by the atmosphere. Moisture and clouds: mechanism that		
	produces clouds ,Cloud produced by mixing and by cooling.		
Teaching	Plan for Practical (Third Semester)	Class: BSc	Part-2
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	Experiments:-		
	1. To determine characteristics of CB transistor		
	2. To determine characteristics of CE transistor		
	3. Measurement of magnetic field by Hall probe method		
	4. To study variation of gain of CE amplifier with load5. To study Zener regulated power supply		
	6. To determine characteristics of FET	72	
	7. To study FET as a voltmeter	12	
	8. To study Weins bridge oscillator		
	9. To study wells bridge oscillator		
	10. To study Wein's bridge oscillator		
	11. To study p-n diode as a rectifier		
	12. To determine characteristics of p-n junction.		
Teaching	Plan for Theory (Fifth Semester)	Class: BS	c Part-3
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized

1. Historical Background: Failure of classical wave theory in explaining Black body radiation and Photoelectric Effect; Compton Effect Qualitative explanation only 2. Assumptions of Planck's Quantum Theory 3. Wave Particle Duality4, Matter Waves: De Broglie Hypothesis, Davisson Germer experiment 4. Concept of Wave Packet, Phase velocity, group velocity and relation between them. 5. Heisenberg's uncertainty principle: Different forms of supplications 5. Heisenberg's uncertainty principle: Different forms of uncertainty principle: Different forms of uncertainty principle: Different forms of uncertainty principle: Thought experiments: single slit diffraction and its applications 5. Heisenberg's uncertainty principle: Different forms of uncertainty principle: Thought experiments: single slit diffraction and fish applications 6. Particle in one dependent and time independent 1. Parts 4. Orpertors in quantum Mechanics 5. Eigen functions and Eigen values 6. Particle in one dimensional and three dimensional box(Energy Eigen values) 7. Qualitative analysis of potential barrier Turneling effect) 8. Simple Harmonic Oscillator (Qualitative analysis of Zero point except) 7. Qualitative analysis of potential barrier Turneling effect) 8. Simple Harmonic Oscillator (Qualitative analysis of Zero point except) 7. Qualitative analysis of potential barrier Turneling effect) 8. Simple Harmonic Oscillator (Qualitative analysis of Zero point except) 7. Qualitative analysis of potential barrier Turneling effect) 8. Simple Harmonic Oscillator (Qualitative analysis of Zero point except) 8. Simple Harmonic Oscillator Science Final Republic Active Physics 9. Detection of Campel particles, Campel Advantages of Republic Physics 9. Leaves 1. A capture of Republic Physics 1. A capture Physics 1. A capture Physics 1. Simple Physics 1. A capture Physics 1. Simple Physics 1. Sin				
1) Wave function and its physical significance 2) Schrodinger time dependent equation 3) Separation in time dependent and time independent 1. Parts 4) Operators in quantum Mechanics 5) Figen functions and Figen values 6) Particle in one dimensional and three dimensional box(Energy Eigen values) 7) Qualitative analysis of potential barrier Tunneling effect) 8) Simple Harmonic Oscillator (Qualitative analysis of Zero point energy) Vector Atom Model: Quantum Numbers, Stem Gerlach experiment; selection rules, Is and ji coupling. Types of spectra—Emission & absorption spectra. X-rays, Continuous X-ray spectrum, Diane and Hunt's law, characteristic X-ray spectra, Mosley's law. Raman Effect stoke's and anti-stoke's lines, Quantum theory of Raman effect, Experimental arrangement for Raman Spectroscopy. Unit IV: Nuclear Physics Detection of charged particles; G. M. counter, Binding energy and Mass defect, stability of nuclei Alpha Decay? Range of Alpha particles, Geiger —Nuttal law and Garnow's explanation of alpha deay (qualitative) Beta decay: Types and Pauli's Neutrino Hypothesis Nuclear Fission, Nuclear fusion (concepts only), Nuclear reactors. Unit 5 Hybrid parameters- low frequency equivalent of CE amplifier & its analysios, Bais stability & thermal runway (qualitative). General principles of amplifier classification, RC coupled amplifier, equivalent circuits & gain at low, medium & laboration in electronic Unit 6 Feedback in amplifiers- negative feedback, advantages of negative feedback, high frequency (qualitative), gain-frequency response. Noise & distortion in electronic Unit 6 Feedback in amplifiers- negative feedback, advantages of negative feedback, praces astable, monostable & bistable. Class: BSc Part-3 Class: BSc Part-3 Craching Plan for Practical (Fifth Semester) Class: BSc Part-3 Class: BSc Part-3 Craching Plan for Practical (Fifth Semester) Class: BSc Part-3 Class: BSc Part-3 Craching Plan for Practical (Fifth Semester) Class: BSc Part-3 Class:		 in explaining Black body radiation and Photoelectric Effect; Compton Effect Qualitative explanation only 2. Assumptions of Planck's Quantum Theory 3. Wave Particle Duality4. Matter Waves: De Broglie Hypothesis, Davisson Germer experiment 4. Concept of Wave Packet, Phase velocity, group velocity and relation between them. 5. Heisenberg's uncertainty principle: Different forms of uncertainty principle; Thought experiments: single slit 	14	
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4. To study Hartlay oscillator. 5. To study Colpits oscillator.		1.To study RC coupled amplifier- variation of gain with load.	Available	Utilized
5. To study Colpits oscillator.		1.To study RC coupled amplifier- variation of gain with load. 2. To study phase shift oscillator.		Utilized
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	7 To determine 'e' by Themsons method		
	7. To determine 'e' by Thomsons method.		
	8. Determination of Rydberg's constant.		
	9. To study absorption spectrum of Iodine vapors.		
	10. To study Raman spectrum.		
	11. To identify elements in optical line spectrum.		
	12. To determine absorption coefficient of material for		
	gamma rays.		
Teaching	Plan for Theory (Second Semester)	Class R	Sc Part-1
		Lectures	Lectures
Sr. No.	Topic to be covered	Available	Utilized
Unit 1			
	Ideal Gas - Kinetic theory of Gases (Assumption, equation without		
	derivation), deduction of Boyle's law, interpretation of temp. Estimation of R		
	M S speed of molecule; Estimation of Avagadro's number; degrees of		
	freedom; equipartition of energy; specific heat of monatomic gas; extension		
	to di & tri-atomic gases. Real Gas- Vander Waals gas equation of state,		
	Comparison with experimental P-V curves, the critical constants; nature of	15	
	Vander-Waals forces. Transport Phenomena in gases: Molecular Collision,		
	mean free path, Brownian motion and collision cross section. Transport of		
	mass, momentum and energy and interrelationship ,dependence on		
	temperature and pressure. Numericals		
Unit 2			
CIIIt 2	The laws of thermodynamics - The zeroth law, P-V indicator diagrams, work		
	done by and on the system; First law of thermodynamics, internal energy as a		
	state function and other applications; Reversible and irreversible changes;		
	Carnot Cycle and its efficiency for perfect gases, The Second law of		
	thermodynamics; different versions of second law, Carnot theorem; Entropy,	15	
	S-T diagram; Principle of increase of Entropy; The thermodynamic scale of		
	temperature; its identity with the perfect gas scale. Impossibility of attaining		
	the absolute zero, third law of thermodynamics. Numericals.		
Unit 3	,		
	Liquefaction of Gases - Joule-Thomson effect, Joule's coefficient, Boyle and		
	inversion temperature; Principle of regenerative cooling and Cascade		
	Cooling, Liquefaction of hydrogen and helium Thermodynamic		
	relationships- Thermodynamic Variables, Extensive and intensive, Maxwell's	15	
	general relationship; application to Joule-Thomson cooling and adiabatic	13	
	cooling in a general system. Clausius-clapeyron heat equation,		
	thermodynamic Potentials and equilibrium of Thermodynamical systems,		
	relation with thermodynamical variables.		
Unit 4	Motion of Charged Particles in Electric and Magnetic Folder (Note: The		
	Motion of Charged Particles in Electric and Magnetic fields:(Note: The emphasis should be on Mechanical aspects, and not on the details of the		
	apparatus mentioned which indicated as applications of principles involved.)		
	E as an accelerating field, electron gun, case of discharge tube, linear		
	accelerator (linac), E as a deflecting field, Transverse magnetic field, Mass	15	
	spectrograph, velocity selector, curvatures of tracks for energy determination		
	of nuclear particles, Principle of cyclotron. Mutually perpendicular E and B fields, velocity selector, its resolution. Numericals		
Unit 5	notas, vetocity selector, its resolution. Pulificities		
	Network theorem: Thevenin's theorem, superposition theorem(mesh current		
	analysis), Maximum power transfer theorem, some applications. Ballistic		
	galvanometer (theory, charge sensitivity, effect of damping), Application of		
	B.G: Determination of capacitance and high resistance by method of leakage	1.5	
	Varying Currents: Steady currents, current density J, non steady current and	15	
	continuity equation, Kirchoff's laws and analysis of multi-loop circuits, Rise		
	and decay of currents in LR, Rise and decay & charge in CR circuits, and in		
	LCR circuit, resonating frequency. Numericals		
Unit 6	, <u>(1 - 1</u> - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	l.	

	Alternating Currents : A.C. currents, complex numbers and their applications in solving A.C. circuits using J operater, pure R, L, C and their combinations,		
	reactance and impedance, series and parallel resonance, Qfactor, power consumed by A.C. circuit, power factor. Self and mutual inductance, theory of transformer and energy losses in transformer. Numericals	14	
Teaching	Plan for Practical (Second Semester)	Class: BSc	Part-1
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	 Heating efficiency of electrical Kettle with varying voltages. Determination of "I" by Callendar and Barne's method. Cp/Cv by Clement and Desorme's method. Thermal conductivity of an insulator by Lee's disc method. Determination of charge sensitivity of ballistic galvanometer. Measurement of low resistance by Carey-foster Bridge. Measurement of low resistance by potentiometer. Measurement of inductance by phasor diagram method. Measurement of capacitance by phasor diagram method. Study of frequency resonance of series LCR circuit and determination of Q-factor. To study behavior of R-C.circuit as a filter. To determine high resistance by leakage method. C1 / C2 by De-Sauty's method. Verification of laws of capacitances. 	90	
Teaching Class: BS Sr. No.	Plan for Theory (Fourth Semester)	Lectures	Lectures
	_	Available	Utilized
Unit 1 Ge	Cardinal points of an optical system, equivalent focal length and power of coaxial lens system, Interference in thin films due to reflected and transmitted light, interference in wedge shaped thin film, Newton's ring by reflected light, measurement of wavelength of monochromatic light by Newton's, ring, determination of refractive index of liquid by Newton's rings. metals. Meaning of terms hydrometallurgy and pyrometallurgy.	15	
Unit 2 Dif	fraction		
	Fresnel and Fraunhofer Diffraction, Fresnel half period zone, zone plate construction and theory. Double slit diffraction, Plane diffraction grating; construction and elementary theory, determination of wavelength of monochromatic light by using grating. Resolution of images, Rayleigh's criteria for resolution, R. P. of grating.	15	
Unit 3 : P	olarization		
	Concept of polarization, optic axis, double refraction, polarization by double refraction, phase retardation plate :-Quarter wave plate, half wave plate, (Nicol prism-production and analysis of polarized light). Theory of production of elliptically and circularly polarized light, production and detection of elliptically and circularly polarized light. Half shade polar meter, blue of the sky.	15	
Unit 4: La			
	Introduction to Maser, Absorption, spontaneous and stimulated emission, population inversion, pumping characteristics of laser beam. Main components of laser system, three level and four level laser system. Ruby laser, He-Ne laser, semiconductor laser, application of laser. Holography-principle.	15	
Unit 5 Fil	*		
	introduction of fiber optics, total internal reflection, structure and classification of optical fiber. Propagation of light wave in an optical fiber, Acceptance angle and numerical aperture, dispersion, fiber losses, fiber optic communication. Advantages and Disadvantages of optic fibers, application of fiber optics.	15	

Unit 6 Re	newable Energy Sources		
CINC O IXC	Introduction to various renewable energy sources – Solar energy,		
	Wind energy, ocean energy- Waves & tides, geothermal energy,		
	Hybrid Systems, Hydrogen energy systems, Fuel cells. Solar energy -		
	Solar radiations on earth - availability and seasonal variations, Solar		
	constant, Spectral distribution, Measurement of solar radiation and	14	
	sun shine. Solar Energy Storage: - Methods of storage, properties of	1.	
	storage materials. Principle of Solar Thermal Applications, Solar		
	water heater, Solar concentrating collectors - Types, applications.		
	Solar Photovoltaic systems Operating principle, Photovoltaic cell concepts, power of a solar cell and solar PV panel; Applications.		
Teaching	Plan for Practical (Fourth Semester)	Class: BSc Pa	rt-2
Sr. No.	Topic to be covered	Lectures	Lectures
2271107	To determine the wavelength of monochromatic light by Newton's	Available	Utilized
	rings.		
	1. To verify the Brewster's law.		
	2. To determine the refractive indices for ordinary and extra-ordinary		
	rays using double image prism.		
	3. To determine the Concentration of sugar solution by half shade		
	polarimeter.		
	4. To determine the wavelength of monochromatic light by plane		
	diffraction grating.	87	
	5. To find the number of lines per centimeter of the given grating.		
	6. To determine the resolving power of plane diffraction grating.		
	To determine the resolving power of telescope.		
	8. To determine the wavelength of laser light.		
	9. Determination of refractive index of a prism by spectrometer.		
	10. Determination of solar constant		
i i			
	11. To determine frequency and phase of signal using CRO.12. To determine capacitance by Scherring bridge method.		
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	 11. To determine frequency and phase of signal using CRO. 12. To determine capacitance by Scherring bridge method. Plan for Theory (Sixth Semester)	Class: BSc Part-	
Teaching Sr. No.	11. To determine frequency and phase of signal using CRO.12. To determine capacitance by Scherring bridge method.	Class: BSc Part- Lectures Available	3 Lectures Utilized
Sr. No.	11. To determine frequency and phase of signal using CRO. 12. To determine capacitance by Scherring bridge method. Plan for Theory (Sixth Semester) Topic to be covered attistical Mechanics	Lectures	Lectures
Sr. No.	11. To determine frequency and phase of signal using CRO. 12. To determine capacitance by Scherring bridge method. Plan for Theory (Sixth Semester) Topic to be covered attistical Mechanics Phase space, unit cell, microstates, macrostates, energy states, density of	Lectures	Lectures
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		1	
	vector; magnetic susceptibility; Dia -, Para-, and Ferromagnetic Materials;		ı
	Classical Langevin Theory of di and Paramagnetic Domains; Quantum		ı
	Mechanical Treatment of Paramagnetism; Curie's law, Weiss's law;		ı
TT '4 C	Hysteresis and Energy Loss		
Unit 6	Constant of the Name Technology Constant of the Land of the Land	1	
	Superconductivity & Nano Technology Superconductivity: Introduction to		ı
	Superconductors; Critical Temperature; Critical magnetic field; Meissner – effect; Type I and type II Superconductors, Idea of BCS theory (No		İ
	derivation), Cooper pair; Applications of superconductors. Nano Technology:	14	ı
	Introduction to nano size materials, brief History of Nano materials, Effect of	14	ı
	reduction of dimensions on physical properties; quantum size effect;		ı
	Applications of nano materials in different fields.		ı
Teaching	Plan for Theory (Sixth Semester)	Class: BSc Pa	rt-3
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
	To study crystal models and identification of crystal planes.		
	2. To study Characteristics of Photocell		l
	3. To determine Planck's constant using photocell		l
	4. To determine energy gap of semiconductor using four probe		İ
	method.		İ
	5. To determine activation energy of Thermister.		ı
	6. To determine energy gap of semiconductor using reverse bias		l
	method	90	İ
	7. To study hysterisis losses in transformer core and plot B-H curve.		l
	8. To measure magnetic susceptibility of solids.		l
	9. To study thermoemf using thermocouple.		ı
	To study thermoethi using thermocouple. To Determination of temperature coefficient of resistance of		ı
	<u> </u>		ı
	11. platinum using platinum resistance thermometer.		ı
	12. To determine lattice parameter using X-ray diffraction pattern.		ı
			1

PROGRAMS SCHEDULE(2021-2022)

Sr.	Particulars	Date
No.		
01	Hiroshima and Nagasaki day	06/08/2021
02	Seminar competition	29/01/2021
03	National science day	28/02/2022
04	Guest lecture	09/03/2022

Mr. V. R. Wankhade HOD

SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S ARTS & COMMERCE COLLEGE WARVAT BAKAL DIST- BULDANA **DEPARTMENT OF COMPUTER SCIENCE** DEPRTMENTAL ACADEMIC **CALENDAR 2021-22**

Departmental Academic Calendar (2021-22)

Departmental Academic Calendar (2021-22)
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Departn	nental Academic Calenda	ar (2021-22)				
Sr. No.	Activity	Commencement	Cessation	Total	Days	
01	First Session	30/08/2021	15/01/2022	10)5	
02	Admission Process	01/09/2021	18/09/2021	14	4	
	Teaching Days (Odd	27/09/2021	30/10/2021	26		
03	Semesters)	08/11/2021	15/01/2022	57	83	
04	Induction Program for First Year Students	20/09/2021	25/09/2021	0	6	
05	First Term Vacation	01/11/2021	06/11/2021	0	06	
06	Summer 2022 Examination	27/01/2022	05/02/2022	19	9	
07	Second Session	17/01/2022	31/05/2022	10	19	
08	Teaching Days (Even Semesters)	07/02/2022	31/05/2022 90		0	
08	Second Term Vacation	01/06/2022	30/06/2022	20	6	
09	Even Semesters University ExmWinter 2022	01/06/2022 30		0		
10	Commencement of next Academic session 01/07/2022					
Sr. No.	Public H	[oliday	Day & I)ate		
01	Ganesh Chaturthi	ionaly	Friday, 10 th Septem			
02	Gauri Pujan		Monday, 13 th Septen		1	
03	Mahatma Gandhi Jayant	i	Saturday, 02 th Octob			
04	Sarvpitri Amavasya		Wednesday, 06 th Oc		21	
05	Dasara		Friday, 15th October			
06	Eid A Milad		Tuesday, 19th Octob			
07		Friday, 19 th November, 2021				
0,	Gurunanak Jayanti		Friday, 19th Novemb	per, 2021		
08	Gurunanak Jayanti Christmas				21	
	-		Saturday, 25 th Dece Friday, 14 th January	mber, 202 , 2022		
08	Christmas		Saturday, 25 th Dece	mber, 202 , 2022		
08 09 10 11	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah	araj Jayanti	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru	mber, 202 7, 2022 nuary, 202 1ary, 2022	22	
08 09 10 11 12	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri	araj Jayanti	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March	mber, 202 7, 2022 nuary, 2022 nary, 2022 n, 2022	22	
08 09 10 11	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day)	araj Jayanti	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March,	mber, 202 r, 2022 nuary, 2022 n, 2022 2022	22	
08 09 10 11 12 13 14	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa	× •	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March	mber, 202 r, 2022 nuary, 2022 n, 2022 2022	22	
08 09 10 11 12 13	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day)	× •	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March,	mber, 202 1, 2022 nuary, 2022 11, 2022 1, 2022 1, 2022	22	
08 09 10 11 12 13 14	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa Dr. Babasaheb Ambedka	× •	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March, Saturday, 02 nd April	mber, 202 1, 2022 nuary, 2022 1, 2022 1, 2022 1, 2022	22	
08 09 10 11 12 13 14 15	Christmas Makarsankranti Republic Day Chhatrapati Shivaji Mah Mahashivratri Holi (Second Day) Gudhi Padwa Dr. Babasaheb Ambedka Jayanti	ar Jayanti / Mahavir	Saturday, 25 th Dece Friday, 14 th January Wednesday, 26 th Jan Saturday, 19 th Febru Tuesday, 01 st March Friday, 18 th March, Saturday, 02 nd April Thursday, 14 th April	mber, 202 1, 2022 nuary, 2022 1, 2022 1, 2022 1, 2022 1, 2022	22	

Time Table

Mr. D. Chaube

Faculty: Sc	eience		Subjec	t: Computer	Science
Period	1	2	3	4	5
Day /	11 to 11:48	11:48to	12:36to	1:34 to	2:30 to 4:54
Time	(P)	12:36	1:24	2:22	
		(P)	(P)		
MON	T	T		T	P
	(B.sc II)	(B.sc I)		(B.sc III)	(B.sc I)
TUE	T	T	T		P
	(B.sc I)	(B.sc II)	(B.sc III)		(B.sc I)
WED	T	T	T		P
	(B.sc I)	(B.sc II)	(B.sc III)		(B.sc II)
THUS	T	T	T		P
	(B.sc II)	(B.sc I)	(B.sc III)		(B.sc II)
FRI	T	T	T		
	(B.sc I)	(B.sc II)	(B.sc III)		
Day /	07:30 To	08:18To	9:16 to		10:4 to
Time	08.18	09:06	10:04		12:28
SAT	T	T	T		P
	(B.sc II)	(B.sc I)	(B.sc III)		(B.sc III)
1			I	1	

Allotted Workload

Subject: Computer Science Year: 2021-2022

Sr. No.	Class	No. of	f periods pe	r week	Paper
Sr. No.	Class	Lectures	Tutorials	Practical	Allotted
1	B.Sc1	06		2 * 3 = 06	
2	B.Sc2	06		2 * 3 = 06	
3	B.Sc3	06		2 * 3 = 06	

Total Workload per week (L+P): 18 (L) + 18 (P) = 36 (L) (28.8 hrs.)

Teaching Periods Available per month during the session 2021-2022 Faculty: Science Subject: Computer Science

	tj : Belefiee							10 02.10	J		ter ber	
			Odd semester				Even semester					
		Sep	Oct	Nov	Dec	Jan	Total	Feb	Mar	Apr	May	Total
D Co. I	Theory	4	22	19	26	11	82	17	25	23	24	89
B.ScI	Practical	6	21	24	24	12	87	18	24	24	24	90
B.Sc	Theory	4	22	19	26	11	82	17	25	23	24	89
II	Practical	6	24	15	24	09	78	18	30	21	24	93
B.Sc	Theory	4	22	19	26	11	82	17	25	23	24	89
III	Practical	0	24	15	24	9	72	15	21	24	24	84

	Teaching Plan for Theory (First Semester)	Class: BSc Part-I	
Sr.	Topic to be covered	Lectures	Lectures
No.	Topic to be covered	Available	Utilized
UNIT-	: Introduction to Computers :		
01111	Characteristics, classification of Computers, block diagram of		
	computer, memory and their types: Primary and secondary memory	1.4	
	Peripheral devices : Keyboard, mouse, scanner, printers : Impact,	14	
	Non-impact, DMP, inkjet, Laser.		
UNIT-	I : Introduction to OS :		
	DOS: Booting process, formatting, directory structure, FAT.		
	Internal DOS commands: REN, CD, MD,RD, DIR, DEL, COPY,		
	TYPE, DATE, TIME, COPYCON, PROMPT External commands:		
	FORMAT, XCOPY, CHKDSK, PATH, ATTRIB, AUTOEXEC.	14	
	BAT, CONFIG.SYS Windows: Introduction, features, Windows		
	Explorer Number system : Decimal, binary, octal, hexadecimal and		
	their conversions, ASCII Code.		
UNIT-	III : Introduction to Internet :		
	Direct, Types of Internet connection: Direct dial-up, broadband,		
	Internet protocol: TCP/IP, FTP, HTTP, Domain name e-mail		
	address, WWW, web browser: Internet Explorer. Netscape	14	
	navigator, search en		
[]NIT-	V: Programming Concept:		
01111-1	Algorithm flowcharting programming languages, assembler,	1	
	interpreter, compiler programming process: program design,		
	coding compilation, Execution, testing, debugging documentation	14	
TINITE	structured programming : features and approches		
UNII-	V: Elements of C:		
	Introduction to C, History, features structure of C program, header		
	file, character set, keywords, identifiers, constants, variables, basic	1.0	
	data types, symbolic constants, typedef operators & Expressions :	13	
	Arithmetic, Relational, logical assignment, Increment and		
	decrement, precedence of opations		
UNIT-	VI : I/O Operations :		
	Formatted I/O: Printf(), Scanf(), Unformatted I/O: getch(),		
	getche (), getchar(), putch (), putche (), putchar (), gets (), Puts(
), Controal structure : if , if else, nested if, conditional operator ,	13	
	switch, goto, for, while, dowhile, nesting of loops, break,		
	continue.		
Teachi	ng Plan for Practical (First Semester) Class	: BSc Part-I	
	1 D		
	1. Practical on Word Processing.		
	2. Practical on Spread Sheets.		
	2. Practical on Spread Sheets.		
	 Practical on Spread Sheets. Practical on Design of Presentation. Write a program in 'C' to demonstrate Arithmetic Operations. 		
	 Practical on Spread Sheets. Practical on Design of Presentation. Write a program in 'C' to demonstrate Arithmetic Operations. Write a program in 'C' to demonstrate If -Else Statement. 6. 		
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	 Practical on Spread Sheets. Practical on Design of Presentation. Write a program in 'C' to demonstrate Arithmetic Operations. Write a program in 'C' to demonstrate If -Else Statement. 6. Write a program in 'C' to demonstrate Nested If Statement. Write a program in 'C' to demonstrate ElseIf ladder Statement. Write a program in C to demonstrate Switch-case Statement. Write a program in 'C' to demonstrate For Loop Statement. Write a program in 'C' to demonstrate Nested For Loop Statement. Write a program in 'C' to demonstrate While Loop Statement. Write a program in 'C' to demonstrate While Loop Statement Write a Plan for Theory (Third Semester) Class: BSc II Sem Object-Oriented Programming with C++ and Web Technology. Concept of OOP, Comparision with POP, features of OOP, advantages and applications of OOP, Introduction to C++, 		
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Unit-III: Classes and objects: Data abstraction and, Encapsulation, Data Hiding, class specification, defining objects, accessing class member, defining member functions, Nesting of properties as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects as arguments, Returning objects from functions, Passing objects from functions, Passing objects from functions, Passing objects from functions, Passing objects from functions, Passing objects as arguments, Passing objects as arguments, Passing objects as arguments, Passing objects as arguments, Passing objects and the passing objects from functions, Passing objects as arguments, Passing objects as arguments, Passing objects and passing objects from functions, Passing objects from functions, Passing objects from functions, Passing objects from functions, Passing objects, Passing o	operator implicit & explicit conversions		
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: New Project window, property window, Form layout window,			
	: New Project window, property window, Form layout window,	14	

UNIT-V: Creating Menus :	
Application wizard for menu, menu editor, creating menu, adding	
code to menus, data types & variables. Operators : Conditional	12
operators, logical operators, control structures : If-else, Nested If—	13
else, select case, goto, do loop, for loop, nested for loop.	
UNIT-VI : Introduction to Internal Functions :	•
Msgbox(), named constant, default buttons, specifying icons. Input	
box(), title, caption; using check box and option button in form. VB	13
Programmes: Private and public procedure, passing data by	13
reference and value, passing control as arguments.	
Teaching Plan for Practical (Fifth Semester) Class: BSc P	art-III
1)JAVA Programming	
1) Convert Rupees into paise	
2) Check If a Given Number is ArmStrong Number	
3)Make Calculator using the switch statement	
4) Demonstrate the functioning of the do-while loop in java	
5) Demonstrate method overriding in java	72
2) 'C++'	
1)Find the area of circle constant argument	
2)Demostrate the use of scope resolution Operator	
3)Demostrate the use of Manipulation.4)Illustrate single inheritance in Public mode.	
5)Display the list of student using multilevel inheritance.	
	:: BSc Part-I
UNIT-I: Data structure:	s. DSC 1 at t-1
Introduction to data structure, Types of data structure:	
Primitive and Non-primitive, Linear and Non-linear data structure,	
Data structure operations. Array: Definition and concepts, Memory	
Representations, Operations: Traversing, Insertion, Deletion.	15
Stacks: Definition and concepts, Memory	
Representations, Operations: Traversing, Insertion, Deletion.	
UNIT-II: Queue:	<u> </u>
01111-11. Queuc.	
Linked list & its implementation, traversing, insertion, deletion	15
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Linked list & its implementation, traversing, insertion, deletion	15
Linked list & its implementation, traversing, insertion, deletion algorithms, circular Queue. UNIT-III: Tree:	15
Linked list & its implementation, traversing, insertion, deletion algorithms, circular Queue. UNIT-III: Tree: Definition and concepts, Memory Representations, Operations:	15
Linked list & its implementation, traversing, insertion, deletion algorithms, circular Queue. UNIT-III: Tree: Definition and concepts, Memory Representations, Operations: Traversing, Insertion, Deletion. Types of Queue. Linked List:	15
Linked list & its implementation, traversing, insertion, deletion algorithms, circular Queue. UNIT-III: Tree: Definition and concepts, Memory Representations, Operations: Traversing, Insertion, Deletion. Types of Queue. Linked List: Definition and concepts, Memory Representations, Types of Linked	15
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LENGTH, LTRIM, RTRIM, LPAD, RPAD, SOUNDEX,
Joins and Unions: Self, equi and outer join, unions and
intersection.
UNIT-II: PL/SQL :
Features and block structure, variables and
constant, data types, control structure.
Cursor: Concepts of cursor, types, declaring, opening,
using cursors, fetching data, closing a cursor, cursor 15
attributes.
Transaction: Rollback, commit and autocommit, save point,
rollback segment
UNIT-III : Securities of Database :
Users, creating users, roles,
creating roles, types of previleges, GRANT and REVOKE
commands data lock
UNIT-IV : Dialog Box Control :
Need for dialog box control,
adding the dialog box control, producing the color dialog
box control, handling the cancel button, producing the font
dialog box, producing the open dialog boxes, producing
file save dialog boxes, producing the print dialog boxes. Mouse
and Control: Mouse response, list box controls,
combo box control, timer control, working with arrays,
declaring arrays, multiple list boxes.
UNIT-V: Working with Forms:
Form collections, accessing the
form collection using the subscripts, the count property,
uploading forms, placing text on forms, format with print, 15
positioning the print method, multiple forms, placing tool bars on
forms.
UNIT-VI : Working with Files :
Open statement, file modes,
locking the file, close statement, working with sequential
access file, print# statement, input# statement, write#
statement, working with random access file, put statement,
· · · · · · · · · · · · · · · · · · ·
get statement, defining user defined data types, file control, file related commands.
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6) Write the programm in JAVA Applet to Print Smiley face 7) Write the programm in JAVA Applet to display Olympics 8) Write the programm in JAVA Applet to display Human Face	
9) Write the programm in JAVA for Multiplr Catch Block10) Write the programm in JAVA Applet to display Chess Board.	

PROGRAMS SCHEDULE (2021-2022)

Sr. No.	Particulars	Date
01	Poster Competition	20/10/2021
02	Seminar Competition	2/12/2021
03	IT Company Visit	27/01/2022
04	National Science Day	28/02/2022
06	Guest Lecture	6/03/2022

Mr. D. Chaube HOD

Principal
Arts & Commerce College,
Warvat Bakal Dist.Buldana

SATPUDA EDUCATION SOCIETY, JALGAON (JAMOD)'S

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde In- Charge Principal Shri. Krushnarao Ingle (Ex MLA) President

Email: 327accwb@gmail.com

Phone: 07266-237126

visit us at: www.acscwb.co.in

Criterion I: Curricular Aspects

1.1. Curriculum Planning and Implementation

Teaching Faculty List Session-2021-2022

Supporting Documents D

1.1.1 The institution ensures effective curriculum delivery through a well-planned and documented process

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CERTIFICATE

This is to certify that the documents attached as supporting documents for Criterion I: Curricular Aspects are verified from the college record and found to be correct to the best of my knowledge.

Arts & Commerce College, Warvat Bakal Dist.Buldana

Warvat Bakal Dist- Buldana

List of Teaching Faculty

Sr. No.	Name of teaching faculty	Designation	Qualification	Department	
1	Dr. Jagannath Sukhadeo Chaudhari	Principal	M.A., M.Phil. Ph.D.	Marathi	
2	Dr. Rajendra Shrirampant Korde	HoD &Assistant Professor	M.A., Ph.D.	Political Science	
3	Dr. Subhash Ramchandra Gurjar	HoD &Assistant Professor	M.A., M.Phil, Ph.D., SET	Economics	
4	Dr. Subhash Shankarrao Pawar	HoD &Associate Professor	M.A., M.Phil, Ph.D.	History	
5	Mr. Ananad Udebhan Dhundale	HoD &Assistant Professor	M.A.	Marathi	
6	Mr. Nishigandh Prabhakar Satav	HOD &Assistant Professor	M.A. M.Phil	- English	
7	Mr. Nagesh Wasudeo Ingle	Assistant Professor	M.A. B.Ed., SET	Eligion	
8	Dr. Satish Wasudeo Rane	HoD &Assistant Professor	M.Com., M.Phil., Ph.D., NET		
9	Dr. Sanjay Jagdeorao Tale	Assistant Professor	M.Com., Ph.D., MBA, NET	Commerce	
10	Mr. Suresh Ramesh Bhaltadak	Assistant Professor	M.Com., SET, NET		
11	Mr. Nityanand Devidas Dahake	HoD &Assistant Professor	M.Sc., B.Ed., SET		
12	Dr. Vijayanand Dyandeo Ingale	Assistant Professor	M.Sc., B.Ed., Ph.D.	CI.	
13	Mr. Nilesh Shridhar Shelke	Assistant Professor	M.Sc., SET	Chemistry	
14	Mr. Kiran Prakash Sabale	Assistant Professor	M.Sc., NET, GATE		
15	Mr. Santosh Shrikrushna Mhasal	HoD &Assistant Professor	M.Sc., B.Ed. SET		
16	Dr. Kishor Bhaskar Theng	Assistant Professor	M.Sc., B.Ed., Ph.D.	Botany	
17	Dr. Dnyaneshwar Krishna Sherkar	Assistant Professor	M.Sc., Ph.D.	Dotany	
18	Dr. Nandkishor Keshavrao More	Assistant Professor	M.Sc., B.Ed., Ph.D.		
19	Dr. Megha Ranjit Solanke	HoD &Assistant Professor	M.Sc., M.Phil., Ph.D.		
20	Dr. Madhuri Sudhakar Hingankar	Assistant Professor	M.Sc., B.Ed., Ph.D.	7 1	
21	Ms. Sonali Anil Tayade	Assistant Professor	M.Sc., SET, NET, GATE	Zoology	
22	Mr. Sushil Diliprao Deshmukh	Assistant Professor	M.Sc., SET		
23	Mr. Gajanan Sheshrao Paikat	Director	M.P.Ed. (NIS)	Physical Education	
24	Mr. Sunil Motiram Makode	Librarian	M.Lib.	Library	

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Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

Departmental Perspective Plan Session-2021-2022

Supporting Document E

1.1.1 The institution ensures effective curriculum delivery through a wellplanned and documented process

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CERTIFICATE

This is to certify that the documents attached as supporting documents for Criterion I: Curricular Aspects are verified from the college record and found to be correct to the best of my knowledge.

Principal
Arts & Commerce College,
Warvat Bakal Dist.Buldana

Warvat Bakal Dist- Buldana

Department of English

Perspective Plan for Curriculum Implementation 2021-22				
		TEACHING PLAN FOR BA ENGLISH		
	Sr. No.	Topic to be covered	Lectures Available	
	01	EDUCATION PROVIDES A SOLID	9	
	01	FOUNDATION		
Theory	02	LOVE STORY	9	
BA SEM I	03	SPEECH ON INDIAN INDEPENDENCE	9	
DA SENI I	04	FILM MAKING	9	
	05	IN THE BAZAARS OF HYDERABAD	8	
	06	SHE WALKS IN BEAUTY	8	
	07	MIDDLE AGE	7	
	Sr. No.	Topic to be covered	Lectures Available	
	01	PARTS OF SPEECH	10	
	02	TENSES	10	
	03	UNSEEN PASSAGE	8	
m 4 • 1	0.4	LETTER WRITING : PERSONAL AND	7	
Tutorial	04	BUSINESS	7	
BA SEM I	05	CURRICULUM VITAE	7	
	0.6	PERSONAL INTERVIEW (INTERNAL	-	
	06	ASSESSMENT)	6	
	07	SEMINAR (INTERNAL ASSESSMENT)	6	
	08	ASSIGNMENT (INTERNAL ASSESSMENT)	3	
	Sr. No.	Topic to be covered	Lectures Available	
	01	APPRO JRD	10	
	02	PACKING	10	
Theory	03	HOW I BECAME A PUBLIC SPEAKER	10	
BA SEM II	04	VALUES IN LIFE	10	
211 (221) 212	05	MONEY MADNESS	7	
	06	NO MEN ARE FOREIGN	7	
	07	ANOTHER'S SORROW	7	
	Sr. No.	Topic to be covered	Lectures Available	
	01	SUBJECT VERB AGREEMENT	10	
	02	VERBS: To be, to do, to have, Modals	10	
	03	STORY BUILDING	7	
Tutorial	04	E-COMMUNICATION	7	
BA SEM II	05	NOTICE / AGENDA / MINUTES	7	
DA SEM II	06	READING SKILL (INTERNAL ASSESSMENT)	6	
	- 00	GROUP DISCUSSION (INTERNAL	0	
	07	ASSESSMENT)	6	
	08	ASSIGNMENT (INTERNAL ASSESSMENT)	5	
	Sr. No.	Topic to be covered	Lectures Available	
	01	INDIA'S MESSAGE TO THE WORLD	9	
	02	THE PLEASURES OF IGNORANCE	8	
		THE HAPPY PRINCE	8	
Theory	03	THE HAPPY PRINCE THE THREE QUESTIONS		
BA SEM III	04		8	
	05	SONNET 116	5	
	06	DIRGE	5	
	07	LEISURE	5	
	08	A BABY SLEEPS AFTER PAIN	5	
Tutorial	Sr. No.	Topic to be covered	Lectures Available	
BA SEM III	01	CLAUSES: MAIN / SUB	10	
	02	TYPES OF SENTENCES	10	

		T	
	03	TELEPHONE CONVERSATION	8
	04	INTERPERSONAL CONVERSAT	ION 8
	0.5	PERSONALINTERVIEW (INTER	NAL
	05	ASSESSMENT)	8
		SEMINAR – PRESENTATION (IN	ITERNAI
	06	· ·	8
		ASSESSMENT)	
	T		
	Sr. No	<u>.</u>	Lectures Available
	01	WHY ARE BEGGARS DESPISED	? 10
	02	ON THE CONDUCT OF LIFE	9
	03	THE GIRL	9
Theory	04	THE MAGIC SHOP	9
BA SEM IV	BA SEM IV 05 WHERE THE MIND IS WITHOUT FEAR		
	06	A LAMENT	6
	07	LOVE IN LIFE	6
	08	UP-HILL	6
	Sr. No	. Topic to be covered	Lectures Available
	01	TRANSFORMATION OF SENTER	NCES 12
		SYNTHESIS OF SENTENCES	
	02	(Simple/Compound/Complex)	12
Tutorial	03	INTERPERSONAL CONVERSAT	ION 10
BA SEM IV	04	CASUAL CONVERSATION	10
	05	PERSONAL INTERVIEW (INTER	NAL 8
		ASSESSMENT)	
	06	SEMINAR-PRESENTATION (INT	ERNAL 8
00		ASSESSMENT)	0
	Sr. No.	. Topic to be covered	Lectures Available
	01	THE OPEN WINDOW	9
	02	THE THREE HERMITS	9
Theory	03	WHAT ID SWARAJ?	9
BA SEM V			
	04	A LETTER TO HIS SON	9
	05	BANGLE SELLERS	8
	06	THE MOUNTAIN AND THE SQU	IRREL 8
	Sr. No	. Topic to be covered	Lectures Available
	01	PRECIS WRITING	14
	02	DEVELOPING A THOUGHT	14
Tutorial	02	PERSONAL INTERVIEW (INTER	
BA SEM V	03		13
		ASSESSMENT)	
	04	SEMINAR-PRESENTATION (INT	ERNAL 12
	0.	ASSESSMENT)	
	Sr. No	. Topic to be covered	Lectures Available
	51.110	. Topic to be covered	(61)
	01	QUALITY	12
Theory	02	MISS BRILL	12
BA SEM VI	03	MY FINANCIAL CAREER	12
DIA GENT VI	03		
		SOCRATES AND THE SCHOOLN	
	05	THE SOLITARY REAPER	7
	06	STAY CALM	6
	Sr. No	. Topic to be covered	Lectures Available
	01	REPORT WRITING	15
TP4 1 1	02	ESSAY WRITING	15
Tutorial		PERSONAL INTERVIEW (INTER	NAL
BA SEM VI	03	ASSESSMENT)	15
		SEMINAR-PRESENTATION (INT	FRNAI
	04	· ·	16
ASSESSMENT)			
	1	B.Com. Part I SEM I	
Unit		Available Lectures	Duration
I Prose		30 Periods	September 2021 to November 2021
II Da atura		30 periods	Septembers 2021 to January 2022
II Poetry		50 periods	Deptembers 2021 to sandary 2022

III Grammar	40 periods	September 2021 to January 2022
IV Written	40 periods	September 2021 to October 2021
Communication	1	1
V Internal Assessment	20 periods	November 2021 to January 2022
* D	B.Com. Part II SEM III	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
I Prose	16 periods	September 2021 to January 2022
II Poetry	16 periods	September 2021 to November 2021
III Communication Skill	04 periods	November 2021 to January 2022
IV Internal Assessment	08 periods	September 2021 to January 2022
	B.Com. Part III SEM V	
I Prose	15 periods	September 2021 to January 2022
II Poetry	15 periods	September 2021 to November 2021
III Communication Skill	08 periods	September 2021 to November 2022
IV Internal Assessment	05 periods	September 2022 to January 2022
	B.Com. Part I SEM II	
I Prose	30 periods	February 2022 to March 2022
II Poetry	31 periods	February to May 2022
III Grammar	50 periods	February 2022 to march 2022
IV Written Communication	30 periods	February 2022 to May2022
V Internal Assessment	20 periods	February 2022 to March 2022
	B.Com. Part II SEM IV	
I Prose	15 periods	February2022 to May2022
II Poetry	15 periods	February to April 2022
III Communication Skill	08 periods	February 22 to march 22
IV Internal Assessment	06 periods	April to May 2022
	B.Com. Part III SEM VI	
I Prose	16 periods	February 2022 to March 2022
II Poetry	15 periods	February to May 2022
III Communication Skill	08 periods	February 2022 to April 2022
IV Internal Assessment	06 periods	April to May 2022
	B.Sc. Part I SEM I	·
I Prose	30 periods	February 2022 to March 2022
II Poetry	30 periods	February to May 2022
III Grammar	20 periods	February 2022 to April 2022
IV Communication Skill	07 periods	April to May 2022
V Internal	07 periods	March to May2022
Assessment	*	
	B.Sc. Part I SEM II	77.
I Prose	30 periods	February 2022 to March 2022
II Poetry	29 periods	February to May 2022
III Grammar	05 periods	February 2022 to April 2022
IV Writing Skill	05 periods	April to May 2022
V Internal Assessment	05 periods	March to May2022
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Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Activity	Tentative Duration
1.	Teacher Day celebrates	September 2021
2.	Online Welcome Program of First Year Students	October 2021
3.	Online Bridge Course For First Year Students	October 2021
4	Study Circle Formation	December 2021
5.	Essay Competition on Savitribai Phule	December 2021
6.	Workshop on Communication Skills	January 2022
7.	Certificate Course in Enhancing Competence in English.	February 2022
8.	Poetry Reading Session	February 2022
9.	One Day National Level Virtual Conference on 'Indian Sensibility in Indian writing in English'	March 2022
10.	Developing Elocution skill session	April 2022
11.	William Shakespeare Death Anniversary	April 2022
12	Writing Skill Session	May 2022

Head, Dept. of English
Arts & Commerce College
Warvat Bakal

Warvat Bakal Dist- Buldana

Department of Economics

BA Part I SEM I						
Unit	Available Lectures	Duration				
I Introduction to Economics	18 periods	August 30 to September 2021				
II Demand & Supply	18 periods	September 2021 to October 2021				
III Cost & Revenue	17 periods	November to December 2021				
IV Market Structures	17 periods	December 2021 to January 2022				
V Factors of Production	17 periods	January 2022				
	BA Part II SEM III					
Unit	Available Lectures	Duration				
I Introduction to Macro Economics	10 periods	August 30 to September 2021				
II Money &Value of Money	10 periods	September 2021 to October 2021				
III Inflation &Deflation	10 periods	November to December 2021				
IV Production & Employment	11 periods	December 2021 to January 2022				
V International Trade	09 periods	January 2022				
	BA Part III SEM V					
Unit	Available Lectures	Duration				
I Indian Economy and Planning	12 periods	August 30 to September 2021				
II Agriculture	11 periods	September 2021 to October 2021				
III Industry	11 periods	November to December 2021				
IV External Sectors & Important areas of concern	11 periods	December 2021 to January 2022				
V Environment and pollution	11 periods	January to February 2022				
•	BA Part I SEM II					
Unit	Available Lectures	Duration				
I Geographical & Economy Features of Maharashtra	18 periods	January to February 2022				
II Population features of Maharashtra	18 periods	February to March 2022				
III Agricultural Economy	17 periods	March to April 2022				
IV Industry & Infrastructure in Maharashtra	17 periods	April To MAY 2022				
V Economy of Maharashtra	18 periods	MAY 2022				
,	BA Part II SEM IV					
Unit	Available Lectures	Duration				
I Commercial Bank	18 periods	January to February 2022				
II Central Bank	18 periods	February to March 2022				
III Co-operative Bank &Nabard	18 periods	March to April 2022				
IV International Monetary fund & World Bank	17 periods	April To MAY 2022				
V Recent services in Banking sector	17 periods	MAY 2022				
Tree in bei vices in bunking sector	BA Part III SEM VI	2022				
Unit	Available Lectures	Duration				
I Introduction of Demography	18 periods	January to February 2022				
II Fertality and Mortality	17 periods	February to March 2022				
III Migration of Population	18 periods	March to April 2022				
THE THE BUILDING OF TODUIUM ON						
	*					
IV Urbanization of Population V Population and Development	17 periods 18 periods	April To MAY 2022 MAY 2022				

Department of Economics

Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Activity	Tentative Duration
1.	Teachers' Day Celebration	5 th September, 2021
2.	Welcome Program of First year students	Third Week of September 2021
3.	Quiz Competition of Banking	October 2021
4.	Study Circle Formation of Economics	October 2021
5.	Celebration of National consumer day	24 December 2021
6.	Bank Visit	Last week of December 2021
7.	Celebration of World consumer day	15 March 2022
8.	Book published	April 2022
9.	Chapter in Book published	May 2022

Head, Dept. of Economics
Arts & Commerce College
Wornet Bakal

Warvat Bakal Dist- Buldana

Department of History

B.A. Part- I; (SEM – I) History of India Earliest Time to 712 A.D.		
Unit	Available Lectures	Duration
Unit-I		
1) Survey of the Sources of Ancient India	15	September 2021
2) Harppan Civilization	15	to October 2021
3) Vedic Age		10 0010001 2021
4) Rise of Religious Movement		
Unit - II		
1)Rise of the Territorial State	10	October 2021
2) Mouryan and Post Mauryan Period		
Unit - III		
1) Gupta Dynasty	15	November 2021
2) Vakatak Dynasty		
Unit -IV		
1) Vardhan Empire		D
2) Major Dynasty of Deccan & South Indian	17	December 2021
3) Arab and Turks Invasion		
Unit - V		
1) Educational in Ancient India		Dagamban 2021
2) Position of the Women in Ancient India		December 2021
3) Judicial Administration in Ancient India		to January 2022
4) Art and Architecture in Ancient India	15	

B.A. Part- II; (SEM – III) History of India From 713 to 1756 A.D.				
Unit	Available Lectures	Duration		
Unit - I 1) Survey of the Sources of Medieval India 2) Establishment and Consolidation of Mughal Empire 3) Mughal Policy	17	September 2021 to October 2021		
Unit - II 1) Mughal Ruling Classes 2) Mughals Relation with India Power 3) Declined of Mughal Empire	15	October 2021 to November 2021		
Unit - III 1) Mughal Economy 2) Mughal Society 3) Religion 4) Cultural Life	10	November 2021		
Unit - IV 1) Sources of Maratha History 2) Emergence of Maratha Power 3) Maratha Power Under Shivaji 4) Maratha Power Under Sambhaji 5) The Maratha War of Independence	20	December 2021 to January 2022		
Unit - V 1) Political Administration Under Maratha 2) Military System Under Maratha 3) Judicial Administration Under Maratha 4) Fiscal Administration of Maratha	10	January 2022		

B.A. Part- III; (SEM – V) History of Modern World From 1780 to 1920 A.D.)			
Unit	Available Lectures	Duration	
Unit - I 1) French Revolution 2) Emergence of Nepolian Bonaparte 3) Congress of Vienna 1815 A.D.	15	September 2021 to October 2021	
Unit - II 1) Making of the Nation 2) Foreign policy of Germany Under Bismarck 3) Germany Under Kaiser William II	20	October 2021 to November 2021	
Unit - III 1) Triple Entente 2) Russo-Japan War 3) First World War	15	November 2021 to December 2020	
Unit - IV 1) The Entry of USA In to First World War 2) Concept of Communism, Capitalism, Socialism 3) The Russian Revolution	15	December 2021	
Unit - V 1) Paris Peace Conference 2) Versailles Treaty And Other 3) The League of Nation Aims, Objective, Structure	15	December 2021 to January 2022	

B.A. Part- I; (SEM – II) History of India from 1206 to 1526 A.D			
Unit Available Lectures Durat			
Unit - I 1) Qutbuddin Aibak 2) Illutmish 3) Razia 4) Balban	15	February 2022	
Unit - II 1) Allauddin Khilji's Political and Administrative Policy 2) Allauddin Khilji's Economic Policy 3) Mahammad Tughaluq 4) Firoz Shah Tughaluq 5) Invasion of Timur 6) The Sayyids, Lodis and The Decline of the Sultanate	17	February 2022 to March 2022	
Unit - III 1) The Bahamani Kingdom 2) The Vijaynagar Kingdom	15	March 2022 to April 2022	
Unit - IV 1) Political Structure During Sultanate Period 2) State and Society 3) Social Status of Women	15	April 2022 to May 2022	
Unit - V 1) Economic and Technological Development 2) Arts and Education 3) Religious Movement	14	May 2022	

B.A. Part- I; (SEM – IV) History of India From 1757 to 1947 A.D.			
Unit	Available Lectures	Duration	
Unit - I 1) Advent of European Power 2) Tool of Expansion of British Dominion in India 3) Economic Changes	15	March 2022	
Unit - II 1) Revolt of 1857 2) Socio-religious Movement 3) Modern Education	17	March 2022 to April 2022	
Unit - III 1) Nationalism 2) India National Congres (Early Phase) 3) India National Congres (Leter Phase)	15	April 2022	
Unit - IV 1) Early Gandhian Programme 2) Non Co-oparation Movement 3) Civil Disobedience Movement 4) Quite India Movement	17	April 2022 to May 2022	
Unit - V 1) Constitutional Development 2) Revolutionary Movement 3) Subhashchandra Bose and Azad Hind Army 4) India Towards Independence	11	May 2022	

B.A. Part- I; (SEM – VI) History of Modern World From 1921 to 1965 A.D.			
Unit	Available Lectures	Duration	
Unit - I			
1)Rise of Fascism in Italy			
2)Rise of Nazism in Germany	15	February 2022	
3)Rise of Stalin in Russia			
4)The Great Economic Depression 1929			
Unit - II 1)Causes and Result of The Second World War 2) Entry of the USA into the Second World War 3)Diplomatic Conferences during the War Period	15	March 2022	
Unit - III 1)United Nations Organization 2)The Emergence of the USA as world Power 3)The Emergence of the USSR as World Power	20	March 2022 to April 2022	
Unit - IV 1)Post War World 2)The Doctrine, The Marshal Plan, Point Four Programme. 3)Military Alliances – NATO, SEATO, CENTO, Warsaw	10	April 2022 to May 2022	
Unit - V 1)The Suez Crisis 2)European Unity and Disunity, European Common Market, Common Wealth of Nation, The Berlin Crisis, Quba Crisis.	15	May 2022	

Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Activity	Tentative Duration
01	Study Circle Formation	November 2021
02	Guest Lecture	February 2022
03	Educational Tour	February 2022
07	Elocution	November 2021 & March 2022
08	Seminar	September 2021 & March 2022
09	Group Discussion	October 2021 & March 2022

H.O.D (HISTORY) Arts & Commerce Cotlege Warvat Bakal, Dtst. Buldana

Warvat Bakal Dist- Buldana

Department of Political Science

Teaching	Plan for Theory Class : B A Pa	rt I - (First Semester) SUB	: Pol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Unit-I	21	
02	Unit-II	19	
03	Unit-III	20	
04	Unit-IV	19	
05	Unit-V	20	
Teaching	Plan for Theory Class: B A Part I -		ol-Science
Sr. No.	Topic to be covered	Lectures Available	
01	Election Commission of India	18	
02	State Executive	15	
03	State Legislature of Maharashtra	13	
04	Local Seif Government of Maharashtra	14	
05	Women Participation in Panchayat Raj	15	
Teaching			SUB: Pol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Constitution of U.K.	20	
02	Parliamentary System of U.K.	19	
03	Constitution of U.S.A.	20	
04	Legislature of U.S.A.	19	
05	SAARC	20	
Teaching	Plan for Theory Class: B A Part II		Pol-Science
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Constitution Of CHINA	18	
02	Executive Of China	15	
03	United Nation Organization (UNO)	14	
04	Structure of UNO	14	
05	Indo-China Relations – Major Issues	15	
Teaching	<u> </u>	III (Fifth Semester) SUB: Po	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Leadership	21	
02	Reservation	19	
03	Nationalism	20	
04	Communalism	19	
05	Terrorism	20	
		(Sixth Semester) SUB: Pol-	
Sr. No.	Topic to be covered	Lectures Available	Lectures Utilized
01	Concept of State	18	
02	Concept of Democracy	15	
03	Concept of Nationalism	13	
04	Concept of Socialism	14	
05	Behaviouralism and Sovereignty	15	

Department of Political Science

Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Particulars	To be organized in	
1.	Constitutional Day	26 November 2021	
2.	Human Rights Day	10 December 2021	
3.	Study Forum	18 December 2021	
4.	National Eassy Compitation	11 January 2022	
5.	Guest Lecturer	12 January 2022 Dr V K Gaikwad	
6.	One day Interdisciplinary National Conference	28 Feb 2022 Topic-75 years of Indian Democracy	
7.	Guest Lecturer	08 March 2022 Dr Shubhangi Rathi. Sub-Women Law &Gender Equality	

Dr. Rajendra S. Korde
Head of Dept. Pclitical Science
Art & Comm Collage Warwat (B)
Tq. Sangrampur Dist Buldhana

Warvat Bakal Dist-Buldana

Department of Commerce

DR.S.W. RANE				
DR.S.W. KANE	BCOM Part I SEM I (P	FC)		
Unit	Available Lectures	Duration		
INTRODUCTION	15	September 2021 to October 2021		
UTILITY APPROACH	15	October 2021 to November 2021		
ELASTICITY OF DEMAND	14	November 20201to December 2021		
PRODUCTION FUNCTION	14	December 2021 to January 2022		
COST AND REVENUE	14	December 2021 to January 2022		
	BCOM Part II SEM III (
Unit	Available Lectures	Duration		
MEANING OF AUDITING	14	September 2021 to October 2021		
INTERNAL CHECK SYSTEM	14	October 2021 to November 2021		
COMPANY AUDITOR	15	November 20201to December 2021		
AUDIT OF DIVISIBLE PROFIT	15	December 2021 to January 2022		
AUDIT OF BANKING	14	December 2021 to January 2022		
	BCOM Part II SEM III (·		
Unit	Available Lectures	Duration		
MATHEMATICS OF FINANCE	13	September 2021 to October 2021		
RATIO AND PROPORTION	13	October 2021 to November 2021		
I	BCOM Part III SEM V (CAC)		
Unit	Available Lectures	Duration		
COST ACCOUNTING	16	September 2021 to October 2021		
MATERIAL COST	16	October 2021 to November 2021		
LABOUR COST	14	November 20201to December 2021		
OVERHEADS	14	December 2021 to January 2022		
PROCESS COSTING	12	December 2021 to January 2022		
BCC	OM Part III SEM V (I&V	WWW-I)		
Unit	Available Lectures	Duration		
NETWORK	15	September 2021 to October 2021		
INTERNET	16	October 2021 to November 2021		
ELECTRONIC MAIL	15	November 20201to December 2021		
THE WORLD WIDE WEB (W3C)	16	December 2021 to January 2022		
DESIGNING WEBSITE/WEBPAGE	10	December 2021 to January 2022		
	BCOM Part I SEM II (E	BEC)		
Unit	Available Lectures	Duration		
BUSINESS AND MANEGERIAL ECONOMICS	16	February to March 2022		
MARKET STRUCTURE	16	March to April 2022		
MARKET STRUCTURE	17	March to April 2022		
FACTORS PRICING	16	April 2022 to May 2022		
FACTORS PRICING	15	April 2022 to May 2022		
BCOM Part II SEM IV (IT)				
Unit	Available Lectures	Duration		
BASIC CONCEPT-INCOME TAX	15	February to March 2022		
COMPUTATION OF INCOME FROM SALARY	16	March to April 2022		
INCOME FROM OTHER	17	March to April 2022		
	•			

SOURCES		
INCOME TAX AUTHORITIES	16	April 2022 to May 2022
RETURN OF INCOME	16	April 2022 to May 2022
	BCOM Part II SEM IV (BST)
Unit	Available Lectures	Duration
CONCEPT OF DISPERSION	15	February to March 2022
CO-EFFICIENT OF DISPERSION	15	March to April 2022
В	COM Part III SEM VI (MAC)
Unit	Available Lectures	Duration
MANAGEMENT ACCOUNTING	17	February to March 2022
BREAK-EVEN-ANALYSIS	15	March to April 2022
RATIO ANALYSIS	16	March to April 2022
BUDGET	16	April 2022 to May 2022
BUDGETARY CONTROL	16	April 2022 to May 2022
BCC	OM Part I SEM VI (I&W	WW-II)
Unit	Available Lectures	Duration
WEB BROWSING	16	February to March 2022
WEB DIRECTORY	16	March to April 2022
SOCIAL NETWORKING	17	March to April 2022
GOOGLE DRIVE	15	April 2022 to May 2022
M.S. FRONT PAGE EXPRESS	16	April 2022 to May 2022

Perspective Plan for Co-curricular Activities 2021-22

	1 crspective 1 and for co-curricular Activities 2021-22			
Sr. No.	Activity	Tentative Duration		
1.	Teacher Day celebrates	September 2021		
2.	Online Welcome Program of First Year Students	October 2021		
3.	Online Bridge Course For First Year Students	October 2021		
4.	Online Quiz Competition On Mahatma Gandhi Jayanti	October 2021		
5.	Study Circle Formation	December 2021		
6.	Debate	January 2022		
7.	Group Discussion	March 2022		
8.	World Consumer Day	March 2022		
9.	Seminar	April 2022		
10.	Guest Lecture	May 2022		



Department of Chemistry

B.Sc Part I SEM I			
		Duration	
Umt	Available Lectures		
Periodic properties and ionic bonding	14 Lectures	September 2021 to January 2022	
and P block elements	14 Lectures	September 2021 to January 2022	
Electronic displacements	14 Lectures	September 2021 to January 2022	
aromatic hydrocarbons	14 Lectures	September 2021 to January 2022	
Thermodynamics	14 Lectures	September 2021 to January 2022	
Gaseous state	14 Lectures	September 2021 to January 2022	
B.Sc Pa	art II SEM III	•	
Unit	Available Lectures	Duration	
Covalent bonding	14 Lectures	September 2021 to January 2022	
Theory of quantitative inorganic nalysis	14 Lectures	September 2021 to January 2022	
Aldehydes and ketones	14 Lectures	September 2021 to January 2022	
Optical isomerism	14 Lectures	September 2021 to January 2022	
hermodynamics and equilibrium	14 Lectures	September 2021 to January 2022	
iquid state	14 Lectures	September 2021 to January 2022	
Unit	Available Lectures	Duration	
Coordination compounds -1	14 Lectures	September 2021 to January 2022	
Coordination compounds-2	14 Lectures	September 2021 to January 2022	
leterocyclic compounds	14 Lectures	September 2021 to January 2022	
yes drugs and pesticides	14 Lectures	September 2021 to January 2022	
hotochemistry	14 Lectures	September 2021 to January 2022	
Molecular spectroscopy	14 Lectures	September 2021 to January 2022	
B.ScPart I SEM II			
Unit	Available Lectures	Duration	
Unit Polarization	Available Lectures 14 Lectures	Duration February 2022 to May 2022	
		February 2022 to	
Polarization P- block elements & nonaqueous	14 Lectures	February 2022 to May 2022 February 2022 to May	
	and P block elements lectronic displacements aromatic hydrocarbons hermodynamics aseous state B.Sc P Unit lovalent bonding heory of quantitative inorganic nalysis ldehydes and ketones ptical isomerism hermodynamics and equilibrium iquid state B.Sc P Unit loordination compounds -1 loordination compounds-2 leterocyclic compounds byes drugs and pesticides hotochemistry	and P block elements 14 Lectures lectronic displacements 14 Lectures 14 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures 18 Lectures 19 Lectures 19 Lectures 19 Lectures 10 Lectures 11 Lectures 11 Lectures 11 Lectures 12 Lectures 13 Lectures 14 Lectures 15 Lectures 16 Lectures 17 Lectures	

5	Physical properties & molecular structure	14 Lectures	February 2022 to May 2022
6	Chemical kinetics	14 Lectures	February 2022 to May 2022
	B.Sc P	art II SEM IV	
Sr. No.	Unit	Available Lectures	Duration
1	Chemistry of transition series elements	14 Lectures	February 2022 to May 2022
2	Inner transition series elements	14 Lectures	February 2022 to May 2022
3	Polynuclear hydrocarbons	14 Lectures	February 2022 to May 2022
4	Aromatic nitro compounds	14 Lectures	February 2022 to May 2022
5	Colligative properties of dilute solutions	14 Lectures	February 2022 to May 2022
6	Crystalline state	14 Lectures	February 2022 to May 2022
	B.ScP	art I SEM VI	
Sr. No.	Unit	Available Lectures	Duration
1	Kinetic aspects of metal complexes	14 Lectures	February 2022 to May 2022
2	Organometallic chemistry	14 Lectures	February 2022 to May 2022
3	Electronic spectroscopy & IR spectroscopy	14 Lectures	February 2022 to May 2022
4	NMR and mass spectroscopy	14 Lectures	February 2022 to May 2022
5	Elementary quantum mechanics	14 Lectures	February 2022 to May 2022
6	Electrochemistry and nuclear chemistry	14 Lectures	February 2022 to May 2022

Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Activity	Tentative Duration
01	Chemistry Study Circle Inauguration	29/11/2021
02	Fire Extinguisher Uses and Handling	29/12/2021
03	Seminar Competition	04/01/2022
04	National Science Day	28/02/2022
05	Guest Lecture	03/03/2022



Warvat (Bakal) , Dist :- Buldana

Department of Botany

Perspective Plan for Curriculum Implementation 2021-22 S.S.Mhasal

	S.S.IVIIIasai		
Teacl	hing Plan for Theory (First Semester) Class:	B.Sc. Part I	
Sr.	Topic to be covered	Lectures	Duration
No.	Topic to be covered	Available	
01	Unit-IV: Bryophyte	13	September 2021 to October 2021
02	Unit-V: Pteridophyte	15	November 2021 to December 2021
03	Unit-VI : Application of Microbes Cryptogams	15	December 2021 to January 2022
Teacl	hing Plan for Practical (First Semester) Class	: B.Sc. Part I	January 2022
Sr.		Lectures	Duration
No.	Topic to be covered	Available	
01	ALGAE	27	September 2021 to October 2021
02	FUNGI AND PLANT PATHOLOGY	24	November2021
03	BRYOPHYTES	24	December 2021
04	PTERIDOPHYTES	18	January 2022
	hing Plan for Theory (Second Semester) Class: B.Sc. I	10	Junuary 2022
Sr.		Lectures	
No.	Topic to be covered	Available	Duration
01	UNIT-IV: Morphology	15	February 2022 to March 2022
02	UNIT-V: Morphology and Utilization of Plants	14	March 2022 April 2022
03	UNIT-VI: Utilization of Plants	14	April 2022 to May 2022
Teacl	hing Plan for Practical (Second Semester) Class	s : B.Sc. I	
Sr.		Lectures	·
No.	Topic to be covered	Available	Duration
01	Gymnosperms: Morphology and anatomy of the following members-Pinus.	09	February 2022
02	Gymnosperms: Morphology and anatomy of the following members Gnetum	06	February 2022
03	Preparation of double stained permanent mount of Pinus stem, needle.	09	February 2022
04	Preparation of double stained permanent mount of Gnetum stem and leaf.	09	March 2022
05	Detailed morphological study of types of root with its modifications.	09	March 2022
06	Detailed morphological study of types of stem with its modifications.	06	March 2022
07	Detailed morphological study of types of leaf with its modifications.	09	April 2022
08	Study of Forms of corolla.	09	April 2022
09	Study of Types of placentation.	06	April 2022
10	Study of Types of Pracentation. Study of Morphology of fruits.	09	May 2022
11	Morphology of plant parts used and medicinal plants prescribed in syllabi	09	May 2022
<u> </u>	Utilization of plants: Spices, fiber yielding plants and	06	May 2022

Teac	hing Plan for Practical (Third Semester) Class:	B.Sc. II			
Sr.		Lectures	Duration		
No.	Topic to be covered	Available			
0.1	Embryology of Angiosperms:	06	September 2021		
01	Observation of wide range of flowers available in the locality and methods of their pollination.				
	Study through permanent slides of T.S. of anthers,	06	October 2021		
02	microsporogenesis, L.S. of ovule, types of	00	October 2021		
02	endosperms and embryo of Capsella.				
	Mounting of T.S. of anthers, Pollen grains and	12	October 2021		
03	pollinia.				
04	Anatomy of angiosperms : Preparation of double	06	October 2021		
04	stained slides of root. (Dicot. & Monocot.)				
	Anatomy of angiosperms : Preparation of double	06	November 2021		
05	stained slides of stem.				
	(Dicot. & Monocot.)				
	Anatomy of angiosperms: Preparation of double	06	November 2021		
06	stained slides of leaf.				
	(Dicot. & Monocot.)	06	N		
07	Taxonomic description of family, Verbanaceae – <i>Lantana</i> .	06	November 2021		
	Taxonomic description of family, Malvaceae-	06	December 2021		
08	Hibiscus.		2021		
00	Taxonomic description of family, Fabaceae-	06	December 2021		
09	Crotalaria.				
10	Taxonomic description of family, Caesalpinoidae-	06	December 2021		
10	Caesalpinea.				
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021		
12	Taxonomic description of family, Apiaceae-	06	December 2021		
13	Corindrum. Taxonomic description of family, Apocynaceae- Vinca.	03	January 2022		
13	Taxonomic description of family, Asclepiadaceae -	03	January 2022		
14	Calatropis.	03	January 2022		
15	Taxonomic description of family, Solanaceae - <i>Datura</i> .	03	January 2022		
1.6	Taxonomic description of family, Lamiaceae-	03	January 2022		
16	Oscimum.		-		
17	Group discussion, record book checking, certification	03	January 2022		
	eaching Plan for Practical (Fourth Semester) Class: B.Sc. II				
Sr. No.	Topic to be covered	Lectures Available	Duration		
	Squash preparation for the study of various stages of	12	February 2022		
01	mitosis		J		
02	Smear preparation for the study of various stages of	12	February 2022		
02	meiosis.		,		
03	To prove Mendel's Monohybrid ratio.	06	March 2022		
04	To prove Mendel's Dihybrid ratio.	06	March 2022		
05	Problems based on Interaction of genes	18	March 2022		
06	To demonstrate test for glucose in grapes, & sucrose in	12	April 2022		
	cane sugar / beet root.				
07	To demonstrate test for protein.	06	April 2022		
08	To demonstrate the lipid test in oily seeds.	06	May 2022		
09	To demonstrate the test for starch / cellulose.	06	May 2022		
10	To demonstrate the activity of enzyme amylase from	12	May 2022		
germinating Wheat grains. Teaching Plan for Theory (Fifth Semester) Class: B.Sc. III					
Sr.		Lectures	Duration		
No.	Topic to be covered	Available	2 41411011		
-					

01	Plant Water Relations	19	September 2021 to January 2022			
Teac	Teaching Plan for Practical (Fifth Semester) Class: B.Sc. III					
Sr. No.	Topic to be covered	Lectures Available	Duration			
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	03	October 2021			
02	To determine the path of water (ascent of sap)	06	October 2021			
03	To determine the rate of transpiration by Ganongs photometer.	06	October 2021			
04	To determine rate of photosynthesis under varying quality of light and CO2 concentration.	03	October 2021			
05	Separation of chloroplast pigments by paper chromatography method.	06	October 2021			
06	To study antagonism of salts.	09	November 2021			
07	To study effect of IAA and Gibberellins on seed germination.	03	November 2021			
08	To demonstrate exo and endosmosis.	03	November 2021			
09	To demonstrate fermentation.	03	December 2021			
10	To demonstrate transpiration by Bell jar.	03	December 2021			
11	To demonstrate anaerobic respiration in germinating seeds.	03	December 2021			
12	To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i>	03	December 2021			
13	Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> .	06	December 2021			
14	Study of morphological and anatomical adaptations in xerophytes - <i>Nerium, Casuarina</i> .	06	December 2021			
15	Determination of pH of different soils and water samples by pH papers	09	January 2022			
16	Study of meteorological instruments -Rain gauge, Hygrometer.	09	January 2022			
Teac	hing Plan for Theory (Sixth Semester) Class	: B.Sc. III				
Sr. No.	Topic to be covered	Lectures Available	Duration			
01	Unit-I : DNA the genetic material :	16	February 2022 to May 2022			
	hing Plan for Practical (Sixth Semester) Cla	ss : B.Sc. III	T			
Sr. No.	Topic to be covered	Lectures Available	Duration			
01	Isolation of DNA by crude method	18	February 2022			
02	Demonstration of Centrifugation	03	February 2022			
03	Working Principle and application of Autoclave	12	March 2022			
04	Working Principle and application of Laminar Air Flow	09	March 2022			
05	Cleaning and Sterilization of Glassware	12	April 2022			
06	Demonstration of technique of Micropropogation	12	April 2022			
07	Preparation of Artificial Seed.	09	May 2022			
08	Pollen viability test.	09	May 2022			
09	Group discussion, record book checking, certification	06	May 2022			

Perspective Plan for Implementation of Curriculum 2021-22 Dr. K. B. Theng

Teachi	ng Plan for Theory (First Semester)		Class : B.Sc. Part I
Sr. No.	Topic to be covered	Lectures Available	Duration
01	UNIT-I: Plant Diversity	14	September 2021 to November 21
02	UNIT-II: Algae	14	November 2021 to December 2021
03	UNIT-III: Fungi	15	December 2021 to January 2022
Teach	ing Plan for Practical (First Semester)		Class : B.Sc. Part I
Sr. No.	Topic to be covered	Lectures Available	Duration
01	ALGAE:- Preparation of temporary mount, identification with reason of following algal materials-Oedogonium, Hydrodictyon	06	September 2021
02	Preparation of temporary mount, identification with reason of following algal materials- Chara	06	October 2021
03	Preparation of temporary mount, identification with reason of following algal materials- Vaucheria	03	October 2021
04	Preparation of temporary mount, identification with reason of following algal materials- Ectocarpus	03	October 2021
05	Preparation of temporary mount, identification with reason of following algal materials- Sargassum	06	October 2021
06	Preparation of temporary mount, identification with reason of following algal materials- Batrachospermum	06	October 2021
07	FUNGI AND PLANT PATHOLOGY Study of genus Albugo&Uncinula	06	November 2021
08	Study of genus Penicillium&Agaricus	06	November 2021
09	Study of genus Puccinia&Cercospora	06	November 2021
10	Study of Crustose, Fruticose& Foliose Liche	06	November 2021
11	Study of symptoms of fungal, viral, bacterial and Mycoplasmal diseases	06	December 2021
12	Collection of fungal specimen & infected plant part from local region	06	December 2021
13	Demonstration of Mushroom Cultivation Technology	03	December 2021
14	BRYOPHYTES Study of external and anatomy features of vegetative and reproductive parts of genera – Marchantia, Anthoceros	03	December 2021
15	Study of external and anatomy features of vegetative and reproductive parts of genera Funaria, Polytrichum and Sphagnum.	06	December 2021 & January 2022
16	PTERIDOPHYTES Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera — Lycopodium& Equisetum	03	January 2022
17	Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera — Osmunda&Selaginella	03	January 2022
18	Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera – Adiantum&Marsilea	03	February 2022
19	Study of fossil specimen.	03	February 2022
	Teaching Plan for Theory (Second Seme	ster) Class: B.S	
Sr. No.	Topic to be covered	Lectures	Duration

		Available		
0.1	YNW Y DI I		February 2022 to March	
01	UNIT-I: Palaeobotany	15	2022	
02	UNIT-II : Gymnosperms	15	March 2022 to April 2022	
03	UNIT-III: Morphology Teaching Plan for Practical (Second Semester)	17 Class	April 2022 to May 2022 ss: B.Sc. I	
a		Lectures		
Sr. No.	Topic to be covered	Available	Duration	
01	Gymnosperms: Morphology and anatomy of the -Pinus.	09	February 2022	
02	Gymnosperms: Morphology and anatomy of the Gnetum	09	February 2022	
03	Preparation of double stained permanent mount of Pinus stem, needle.	09	February and March 2022	
04	Preparation of double stained permanent mount of Gnetum stem and leaf.	09	March 2022	
05	Detailed morphological study of types of root with its modifications.	09	March 2022	
06	Detailed morphological study of types of stem with its modifications.	09	April 2022	
07	Detailed morphological study of types of leaf with its modifications.	06	April 2022	
08	Study of Forms of corolla.	06	April 2022	
09	Study of Types of placentation.	06	April, May 2022	
10	Study of Morphology of fruits.	06	May 2022	
11	Morphology of plant parts used and medicinal plants prescribed in syllabi	06	May 2022	
12	Utilization of plants: Spices, fiber yielding plants and food plants prescribed in syllabi.	06	May 2022	
13	Record checking, certification & group discussion	03	May 2022	
	Teaching Plan for Practical (Third Semester)		: B.Sc. II	
Sr. No.	Topic to be covered	Lectures Available	Duration	
01	Embryology of Angiosperms: Observation of wide range of flowers available in the locality and methods of their pollination.	06	September 2021	
02	Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .	06	October 2021	
03	Mounting of T.S. of anthers, Pollen grains and pollinia.	06	October 2021	
04	Anatomy of angiosperms : Preparation of double stained slides of root. (Dicot. & Monocot.)	06	October 2021	
05	Anatomy of angiosperms : Preparation of double stained slides of stem. (Dicot. & Monocot.)	06	October, November 2021	
06	Anatomy of angiosperms : Preparation of double stained slides of leaf. (Dicot. & Monocot.)	06	November 2021	
07	Taxonomic description of family, Verbanaceae – <i>Lantana</i> .	06	November 2021	
08	Taxonomic description of family, Malvaceae- Hibiscus.	06	November, December 2021	
09	Taxonomic description of family, Fabaceae - <i>Crotalaria</i> .	06	December 2021	
10	Taxonomic description of family, Caesalpinoidae - Caesalpinea.	06	December 2021	
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021	
12	Taxonomic description of family, Apiaceae- Corindrum.	06	December 2021	
13	Taxonomic description of family, Apocynaceae - <i>Vinca</i> .	03	December 2021	

14	Towarania description of family Applania deces	02	
1.	Taxonomic description of family, Asclepiadaceae - <i>Calatropis</i> .	03	January 2022
15	Taxonomic description of family, Solanaceae - <i>Datura</i> .	03	January 2022
16	Taxonomic description of family, Lamiaceae-Oscimum.	03	January 2022
17	Record checking, certification & group discussion	03	January 2022
1	Teaching Plan for Practical (Fourth Semester		: B.Sc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Squash preparation for the study of various stages of mitosis	12	February 2022
02	Smear preparation for the study of various stages of meiosis.	12	February, March 2022
03	To prove Mendel's Monohybrid ratio.	06	March 2022
04	To prove Mendel's Dihybrid ratio.	06	March 2022
05	Problems based on Interaction of genes	30	March, April 2022
06	To demonstrate test for glucose in grapes, & sucrose in cane sugar / beet root.	06	April, May 2022
07	To demonstrate test for protein.	06	May 2022
08	To demonstrate the lipid test in oily seeds.	06	May 2022
09	To demonstrate the test for starch / cellulose.	06	May 2022
10	To demonstrate the activity of enzyme amylase from germinating Wheat grains.	03	May 2022
Teach	ning Plan for Theory (Fifth Semester)		Class : B.Sc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit - II: Metabolism-	14	September 2021 to November 2021
02	Unit - III: Metabolism and growth	13	December 2021 to January 2022
Teach	ning Plan for Practical (Fifth Semester)		Class : B.Sc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	06	g . 1 2021
	1 v 1	06	September 2021
02	To determine the path of water (ascent of sap)	06	October 2021
02	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer.		_
	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration.	06	October 2021
03 04 05	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method.	06 06 06	October 2021 October 2021 October 2021 October 2021
03	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts.	06 06 06	October 2021 October 2021 October 2021
03 04 05 06 07	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination.	06 06 06 06 03 03	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021
03 04 05 06 07 08	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis.	06 06 06 06 03 03	October 2021 October 2021 October 2021 October 2021 November2021 November2021 November2021
03 04 05 06 07	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation.	06 06 06 06 03 03	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021
03 04 05 06 07 08	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation. To demonstrate transpiration by Bell jar.	06 06 06 06 03 03	October 2021 October 2021 October 2021 October 2021 November2021 November2021 November2021
03 04 05 06 07 08 09	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation. To demonstrate transpiration by Bell jar. To demonstrate anaerobic respiration in germinating seeds.	06 06 06 06 03 03 03 03	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021 November 2021 November 2021 November 2021 November 2021
03 04 05 06 07 08 09 10	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation. To demonstrate transpiration by Bell jar. To demonstrate anaerobic respiration in germinating seeds. To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i>	06 06 06 06 03 03 03 03 03	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021 November 2021 November 2021 November 2021 November 2021 November 2021
03 04 05 06 07 08 09 10 11	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation. To demonstrate transpiration by Bell jar. To demonstrate anaerobic respiration in germinating seeds. To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i> Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> .	06 06 06 06 03 03 03 03 03	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021 November 2021 November 2021 November 2021 November 2021 December 2021
03 04 05 06 07 08 09 10 11	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation. To demonstrate transpiration by Bell jar. To demonstrate anaerobic respiration in germinating seeds. To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i> Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> . Study of morphological and anatomical adaptations in xerophytes – <i>Nerium, Casuarina</i> .	06 06 06 06 03 03 03 03 03 03	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021 November 2021 November 2021 November 2021 December 2021 December 2021
03 04 05 06 07 08 09 10 11 12 13	To determine the path of water (ascent of sap) To determine the rate of transpiration by Ganongs photometer. To determine rate of photosynthesis under varying quality of light and CO2 concentration. Separation of chloroplast pigments by paper chromatography method. To study antagonism of salts. To study effect of IAA and Gibberellins on seed germination. To demonstrate exo and endosmosis. To demonstrate fermentation. To demonstrate transpiration by Bell jar. To demonstrate anaerobic respiration in germinating seeds. To demonstrate the phenomenon of nastic movement with help of <i>Mimosa pudica</i> Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> . Study of morphological and anatomical adaptations in	06 06 06 06 03 03 03 03 03 03 03 06 06	October 2021 October 2021 October 2021 October 2021 November 2021 November 2021 November 2021 November 2021 November 2021 December 2021 December 2021 December 2021

	Hygrometer.		
17	Record checking, certification & group discussion	03	January 2022
Teachi	ng Plan for Theory (Sixth Semester)	Class : B.Sc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit-II : Gene Structure and Expression - Concept of gene, Fine structure of Gene.	14	February 2022 to March 2022
02	Unit-VI: Applications of Biotechnology	15	April 2022 to May 2022
Teachi	ng Plan for Practical (Sixth Semester)	Class : B.Sc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Isolation of DNA by crude method	12	February 2022
02	Demonstration of Centrifugation	06	February, March 2022
03	Working Principle and application of Autoclave	12	March 2022
04	Working Principle and application of Laminar Air Flow	12	March, April 2022
05	Cleaning and Sterilization of Glassware	12	April 2022
06	Demonstration of technique of Micropropogation	06	April 2022
07	Preparation of Artificial Seed.	12	May 2022
08	Pollen viability test.	12	May 2022

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	ng Plan for T	Theory (Third Semester)		Class: B.Sc.	
Sr. No.		Part II Topic to be covered	Lectures Available	Duration	
01	UNIT-I: A	angiosperm Systematics & Biodiversity	12	September 2021 to October 21	
02	UNIT-II: A	Angiosperm Systematics	16	November 2021 to December 2021	
03	UNIT-III:	Angiosperm Systematics	17	December 2021 to January 2022	
Teach	Teaching Plan for Practical (First Semester)				
		Part I	Lectures		
Sr. No.		Topic to be covered	Available	Duration	
	ALGAE :-		1170110010		
01	i) ii) iii)	Preparation of temporary mount, identification with reason of following algal materials-Oedogonium, Hydrodictyon Preparation of temporary mount, identification with reason of following algal materials- Chara Preparation of temporary mount, identification with reason of following algal materials-Vaucheria			
01	iv) v) vi)	Preparation of temporary mount, identification with reason of following algal materials- Ectocarpus Preparation of temporary mount, identification with reason of following algal materials- Sargassum Preparation of temporary mount, identification with reason of following algal materials- Batrachospermum	27	September- October 2021	
02	FUNGI AN vii) viii) ix) x) xi) xii) xiii)	Study of genus Albugo & Uncinula Study of genus Penicillium & Agaricus Study of genus Puccinia & Cercospora Study of Crustose, Fruticose& Foliose Lichen Study of symptoms of fungal, viral, bacterial and Mycoplasmal diseases Collection of fungal specimen & infected plant part from local region Demonstration of Mushroom Cultivation Technology	24	November 2021	
03	BRY i) ii)	Study of external and anatomy features of vegetative and reproductive parts of genera — Marchantia, Anthoceros Study of external and anatomy features of vegetative and reproductive parts of genera Funaria, Polytrichum and Sphagnum.	24	December 2021	

			T
	PTERIDOPHYTES		
	iii) Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera –Lycopodium & Equisetum	10	1 2022
	iv) Study of Pteridophyte external and anatomy	18	January 2022
04	features of vegetative and reproductive parts of genera – Osmunda & Selaginella		
	v) Study of Pteridophyte external and anatomy		
	features of vegetative and reproductive parts of		
	genera – Adiantum &Marsilea		
	vi) Study of fossil specimen.		
	Teaching Plan for Theory (Forth Semester) Clas	ss: B.Sc. II	
Sr. No.	Topic to be covered	Lectures	Duration
S1. NO.	Topic to be covered	Available	
01	UNIT-I: Cell Biology	15	February 2022 to March 2022
	UNIT-II : Cell Biology Structure & Functions of Cell		March 2022 to
02	organelles	14	April 2022
03	UNIT-III: Genetics	17	April 2022 to May
	Teaching Plan for Practical (Second Semester)	Class: B.S	2022
	· · · · · · · · · · · · · · · · · · ·	Lectures	
Sr. No.	Topic to be covered	Available	Duration
01	Gymnosperms: Morphology and anatomy of the -Pinus.	09	February 2022
02	Gymnosperms: Morphology and anatomy of the Gnetum	06	February 2022
03	Preparation of double stained permanent mount of Pinus stem, needle.	09	February 2022
04	Preparation of double stained permanent mount of Gnetum stem and leaf.	09	March 2022
05	Detailed morphological study of types of root with its modifications.	09	March 2022
06	Detailed morphological study of types of stem with its modifications.	06	March 2022
07	Detailed morphological study of types of leaf with its modifications.	09	April 2022
08	Study of Forms of corolla.	09	April 2022
09	Study of Types of Placentation.	06	April, May 2022
10	Study of Morphology of fruits.	09	May 2022
11	Morphology of plant parts used and medicinal plants prescribed in syllabi	06	May 2022
12	Utilization of plants: Spices, fiber yielding plants and food plants prescribed in syllabi.	06	May 2022
13	Record checking, certification & group discussion	03	May 2022
	Teaching Plan for Practical (Third Semester)	Class: B.Sc	. П
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Embryology of Angiosperms: Observation of wide range of flowers available in the locality and methods of their pollination.	06	September 2021
02	Study through permanent slides of T.S. of anthers, Microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .	06	October 2021
03	Mounting of T.S. of anthers, Pollen grains and Pollinia.	12	October 2021
04	Anatomy of angiosperms: Preparation of double stained slides of root. (Dicots & Monocot.)	06	October 2021

		0.6	
0.5	Anatomy of angiosperms: Preparation of double stained slides of	06	
05	stem.		November 2021
	(Dicot. & Monocot.)	06	
06	Anatomy of angiosperms: Preparation of double stained slides of leaf. (Dicot. & Monocot.)	06	November 2021
07	Taxonomic description of family, Verbenaceae – <i>Lantana</i> .	06	Name and 2021
07			November 2021
08	Taxonomic description of family Malvaceae - Hibiscus.	06	December 2021
09	Taxonomic description of family, Fabaceae - Crotalaria.	06	December 2021
10	Taxonomic description of family, Caesalpinoidae- Caesalpinea.	06	December 2021
11	Taxonomic description of family, Asteraceae - Tridax.	06	December 2021
12	Taxonomic description of family, Apiaceae - <i>Corindrum</i> . Taxonomic description of family, Apocynaceae - <i>Vinca</i> .	06	December 2021
14	, , , , , , , , , , , , , , , , , , ,	03	December 2021
15	Taxonomic description of family, Asclepiadaceae - <i>Calatropis</i> . Taxonomic description of family, Solanaceae - <i>Datura</i> .	03	January 2022 January 2022
16	Taxonomic description of family, Lamiaceae - <i>Datura</i> . Taxonomic description of family, Lamiaceae - <i>Oscimum</i> .	03	January 2022
17	Record checking, certification & group discussion	03	January 2022
17	Teaching Plan for Practical (Fourth Semester)	Class : B.Sc.	
G N		Lectures	
Sr. No.	Topic to be covered	Available	Duration
01	Squash preparation for the study of various stages of mitosis	12	February 2022
02	Smear preparation for the study of various stages of meiosis.	12	February, 2022
03	To prove Mendel's Monohybrid ratio.	06	March 2022
04	To prove Mendel's Dihybrid ratio.	06	March 2022
05	Problems based on Interaction of genes	18	March, 2022
06	Problems based on Interaction of genes	18	March, 2022
	To demonstrate test for glucose in grapes, & sucrose in cane		·
07	sugar / beet root.	12	April, 2022
08	To demonstrate test for protein.	06	April 2022
09	To demonstrate the lipid test in oily seeds.	06	May 2022
10	To demonstrate the test for starch / cellulose.	06	May 2022
11	To demonstrate the activity of enzyme amylase from	12	May 2022
	germinating Wheat grains.		
Teach	ing Plan for Theory (Fifth Semester)	T a atrawa a	Class : B.Sc. III
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit-V Ecology and Environments	15	September 2021 to November 2021
			December 2021 to
02	Unit - VI: Ecosystem	16	January 2022
Teac	hing Plan for Practical (Fifth Semester)		Class: B.Sc. III
Sr. No.	Topic to be covered	Lectures	Duration
51. 110.	-	Available	Durauon
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	03	October 2021
02	To determine the path of water (Ascent of sap)	06	October 2021
03	To determine the rate of transpiration by Ganongs photometer.	06	October 2021
04	To determine rate of photosynthesis under varying quality of light and CO2 concentration.	03	October 2021
05	Separation of chloroplast pigments by paper chromatography method.	06	October 2021
06	To study antagonism of salts.	09	November2021
07	To study effect of IAA and Gibberellins on seed germination.	03	November2021
08	To demonstrate exo and endosmosis.	03	November2021
09	To demonstrate fermentation.	03	December 2021
10	To demonstrate transpiration by Bell jar.	03	December 2021
11	To demonstrate anaerobic respiration in germinating seeds.	03	December 2021
	To demonstrate the phenomenon of nastic movement with help	03	
12	of Mimosa pudica	03	December 2021

13	Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrill a</i> and <i>Nymphaea</i> .	06	December 2021		
14	Study of morphological and anatomical adaptations in xerophytes –Nerium, Casuarina.	06	December 2021		
15	Determination of pH of different soils and water samples by pH papers	09	January 2022		
16	Study of meteorological instruments –Rain gauge, Hygrometer.	09	January 2022		
Teachi	ng Plan for Theory (Sixth Semester)		Class: B.Sc. III		
Sr. No.	Topic to be covered	Lectures Available	Duration		
01	Unit-II Gene Structure and Expression	17	February 2022 to March 2022		
02	Unit-V : Plant Tissue Culture	16	April 2022 to May 2022		
	Teaching Plan for Practical (Sixth Semester) Class: B.Sc. III				
Teach	ing Plan for Practical (Sixth Semester)		Class : B.Sc. III		
Teach Sr. No.	ing Plan for Practical (Sixth Semester) Topic to be covered	Lectures Available	Class : B.Sc. III Duration		
Sr. No.	Topic to be covered	Available	Duration		
Sr. No.	Topic to be covered Isolation of DNA by crude method	Available 18	Duration February 2022 February, March		
Sr. No. 01 02	Topic to be covered Isolation of DNA by crude method Demonstration of Centrifugation	Available 18 03	Duration February 2022 February, March 2022		
Sr. No. 01 02 03	Topic to be covered Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave	Available 18 03 12	Duration February 2022 February, March 2022 March 2022		
Sr. No. 01 02 03 04	Topic to be covered Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air Flow	Available 18 03 12 09	Duration February 2022 February, March 2022 March 2022 March, April 2022		
Sr. No. 01 02 03 04 05	Topic to be covered Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air Flow Cleaning and Sterilization of Glassware	Available 18 03 12 09 12	Duration February 2022 February, March 2022 March 2022 March, April 2022 April 2022		
Sr. No. 01 02 03 04 05 06	Topic to be covered Isolation of DNA by crude method Demonstration of Centrifugation Working Principle and application of Autoclave Working Principle and application of Laminar Air Flow Cleaning and Sterilization of Glassware Demonstration of technique of Micropropogation	Available 18 03 12 09 12 12	Duration February 2022 February, March 2022 March 2022 March, April 2022 April 2022 April 2022		

Perspective Plan for Curriculum Implementation 2021-22 Dr. D. K. Sherkar

	Teaching Plan for Practical (First Semester)	Class:	B.Sc. Part I
Sr. No.	Topic to be covered	Lectures Available	Duration
01	ALGAE:- Preparation of temporary mount, identification with reason of following algal materials-Oedogonium, Hydrodictyon.	12	September 2021
02	Preparation of temporary mount, identification with reason of following algal materials- Vaucheria.	06	October 2021
03	Preparation of temporary mount, identification with reason of following algal materials- Sargassum.	12	October 2021
04	FUNGI AND PLANT PATHOLOGY Study of genus Albugo & Uncinula.	12	November 2021
05	Study of genus Puccinia & Cercospora.	12	November2021
06	Study of symptoms of fungal, viral, bacterial and Mycoplasmal diseases.	12	December 2021
07	Demonstration of Mushroom Cultivation Technology.	06	December 2021
08	BRYOPHYTES Study of external and anatomy features of vegetative and reproductive parts of genera Funaria, Polytrichum and Sphagnum.	12	January 2022
09	PTERIDOPHYTES Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of genera — Osmunda&Selaginella.	06	January 2022
10	Study of fossil specimen.	06	February 2022
	Teaching Plan for Practical (Second Semester)	Class: B.S	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Gymnosperms: Morphology and anatomy of the -Pinus.	18	February 2022

02	Preparation of double stained permanent mount of Pinus stem, needle.	18	March 2022
03	Detailed morphological study of types of root with its modifications.	18	March 2022
04	Detailed morphological study of types of leaf with its modifications.	12	April 2022
05	Study of Types of placentation.	12	April-May 2022
06	Morphology of plant parts used and medicinal plants prescribed in syllabi	12	May 2022
07	Record Book checking	06	May 2022
	Teaching Plan for Theory (Third Semester)		Class : B.Sc. II
Sr. No.	Topic to be covered	Lectures Available	Duration
01	UNIT IV: Anatomy	16	September- October 2021
02	UNIT V: Anatomy	15	October- November2021
03	UNIT VI : Embryology-	15	December 2021 to January 2022
	Teaching Plan for Practical (Third Semester)	Class: B.Sc	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Embryology of Angiosperms: Observation of wide range of flowers available in the locality and methods of their pollination.	06	September 2021
02	Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .	06	October 2021
03	Mounting of T.S. of anthers, Pollen grains and pollinia.	06	October 2021
04	Anatomy of angiosperms: Preparation of double stained slides of root. (Dicot. & Monocot.)	06	October 2021
05	Anatomy of angiosperms : Preparation of double stained slides of stem. (Dicot. & Monocot.)	06	October- November 2021
06	Anatomy of angiosperms: Preparation of double stained slides of leaf. (Dicot. & Monocot.)	06	November 2021
07	Taxonomic description of family, Verbanaceae – <i>Lantana</i> .	06	November 2021
08	Taxonomic description of family, Malvaceae- Hibiscus.	06	November- December 2021
09	Taxonomic description of family, Fabaceae- Crotalaria.	06	December 2021
10	Taxonomic description of family, Caesalpinoidae- Caesalpinea.	06	December 2021
11	Taxonomic description of family, Asteraceae - <i>Tridax</i> .	06	December 2021
12	Taxonomic description of family, Apiaceae- Corindrum.	06	December 2021
13	Taxonomic description of family, Apocynaceae- Vinca.	03	December 2021
14	Taxonomic description of family, Asclepiadaceae-Calatropis.	03	January 2022
15	Taxonomic description of family, Asceptadaceae- Datura.	03	January 2022
16	Taxonomic description of family, Lamiaceae-Oscimum.	03	January 2022
17.	Practical record checking, certification, group discussion	03	January 2022
1/.	Teaching Plan for Theory (Fourth Semester)	Class: B.Sc	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Unit-IV: Genetics	17	February-March 2022
02	Unit – V Genetics	15	March-April 2022
03	Unit – VI Biochemistry	15	April-May 2022
	Teaching Plan for Practical (Fourth Semester)	Class: B.Sc.	
Sr.	Topic to be covered	Lectures	Duration

No.		Available	
01	Squash preparation for the study of various stages of mitosis	12	February 2022
	Smear preparation for the study of various stages of meiosis.	12	February-March
02	Sincar preparation for the study of various stages of meiosis.	12	2022
03	To prove Mendel's Monohybrid ratio.	06	March 2022
04	To prove Mendel's Dihybrid ratio.	06	March 2022
05	Problems based on Interaction of genes	30	March- April 2022
03	To demonstrate test for glucose in grapes, & sucrose in cane sugar /	30	April 2022
06	beet root.	06	11pm 2022
07	To demonstrate test for protein.	06	May 2022
08	To demonstrate the lipid test in oily seeds.	06	May 2022
09	To demonstrate the test for starch / cellulose.	06	May 2022
	To demonstrate the activity of enzyme amylase from germinating		May 2022
10	Wheat grains.	03	1,14, 2022
	Feaching Plan for Theory (Fifth Semester)		Class: B.Sc. III
Sr.	Topic to be covered	Lectures	Duration
No.	Topic to be covered	Available	
0.1	TI to TII DI		October, November,
01	Unit – IV: Plant responses	14	December-2021,
	Teaching Plan for Practical (Fifth Semester)	Clas	January-2022 s:B.Sc. III
Sr.		Lectures	
No.	Topic to be covered	Available	Duration
01	To study the effect of temperature and organic solvent on permeability of plasma membrane.	06	September 2021
02	To determine the path of water (ascent of sap).	06	October 2021
03	To determine the rate of transpiration by Ganongs photometer.	06	October 2021
	To determine rate of photosynthesis under varying quality of light		October 2021
04	and CO2 concentration.	06	
05	Separation of chloroplast pigments by paper chromatography method.	06	October 2021
06	To study antagonism of salts.	03	November2021
07	To study effect of IAA and Gibberellins on seed germination.	06	November2021
08	To demonstrate exo and endosmosis.	03	November2021
09	To demonstrate fermentation.	03	November2021
10	To demonstrate transpiration by Bell jar.	03	November2021
11	To demonstrate anaerobic respiration in germinating seeds.	03	December 2021
	To demonstrate the phenomenon of nastic movement with help of		December 2021
12	Mimosa pudica	06	
13	Study of morphological and anatomical adaptations in hydrophytes – <i>Hydrilla</i> and <i>Nymphaea</i> .	06	December 2021
14	Study of morphological and anatomical adaptations in xerophytes -	06	December 2021
<u> </u>	Nerium, Casuarina.		D
15	Determination of pH of different soils and water samples by pH	06	December 2021 to
16	papers Study of meteorological instruments -Rain gauge, Hygrometer.	03	January 2022 January 2022
17	Practical record checking, certification, group discussion	03	January 2022
	Teaching Plan for Theory(Sixth Semester)		ss: B.Sc. III
Sr.		Lectures	
No.	Topic to be covered	Available	Duration
01	Unit-IV : Genetic Engineering -	14	February to May- 2022
	Teaching Plan for Practical (Sixth Semester) Cla	ass : B.Sc. III	
Sr. No.	Topic to be covered	Lectures Available	Duration
01	Isolation of DNA by crude method	12	February 2022
02	Demonstration of Centrifugation	06	February-March 2022
03	Working Principle and application of Autoclave	12	March 2022
US	orking i interpre and application of Autoclave	12	141a1C11 2022

04	Working Principle and application of Laminar Air Flow	12	March- April 2022
05	Cleaning and Sterilization of Glassware	12	April 2022
06	Demonstration of technique of Micropropogation	06	April 2022
07	Preparation of Artificial Seed.	12	May 2022
08	Pollen viability test.	12	May 2022

Perspective Plan for Co-curricular activities (2021 - 22)

Department of Botany

Sr.	Particulars	Date
No.		
01	Study Circle Formation	
02	Wildlife week	1-7 October 2021
03	Birbal Sahni Birth Anniversary	14 November 2021
04	International Day for Biological Diversity	29 December 2021
05	Sunderlal Bahuguna:-Indian environmentalist	09 January 2022
	birth anniversary	
06	Flower Arrangement Competition	18 January 2022
07	World Wetland Day	2 February 2022
08	National Science Day Celebration	28 February 2021
09	Natural Color Preparation for Holi (Dhulivandan)	27 March 2021
10	Excursion visit/ Tour	Month of January/February
		2022
11	Seminar	Last Week of January/ May
		2022

8.8. Mhasal.

Heed & Assistant Professor
Department of Botany

Arts, Commerce College, Warwat (Bk.)
Tq:Sangrampur Dist:Buichana 444202

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Department of Zoology

Perspective Plan for Curriculum Implementation 2021-22

B. Sc Part I SEM I				
Unit	Available Lectures	Duration		
I. Classification of non-chordate and phylum protozoa	15 period	September 2021 to November 2021		
II. Phylum Porifera and phylum Coelenterate	13 periods	Septembers 2021 to January 2022		
III Phylum Platyhelminthes and phylum Aschelminths	12 periods	September 2021 to January 2022		
IV Phylum Annelida and Arthropoda	14 periods	September 2021 to October 2021		
V phylum Mollusca and Phylum Echinodermata	15 periods	November 2021 to January 2022		
VI Hemichordata, coral Reefs, Parasitic Adaptation in Helminth	15 Periods	October 2021 to January2022		
-	Part II SEM III			
Unit	Available	Duration		
Oilit	Lectures	Duration		
I Phylum-chordata	12 periods	September 2021 to January 2022		
II Class Amphibia	18 Periods	September 2021 to November 2021		
III Class – Aves	12 Periods	November 2021 to January 2022		
IV Evolution: Meaning and scope	14 periods	September 2021 to January 2022		
V Evolutionary Process	14 periods	September 2020 to February 2021		
VI Adaptive Radiation	13 period	September 2021 to January 2022		
B.Sc.	Part III SEM V			
Unit	Available Lectures	Duration		
I Respiration and Circulation	15 periods	September 2021 to January 2022		
II Muscle Physiology	20 periods	September 2021 to November 2021		
III Nerve physiology and chemical Coordination	14 Periods	September 2021 to November 2022		
IV Reproductive physiology, Homeostasis	12 periods	September 2022 to January 2022		
V Agricultural Zoology: Economic Importance of Insect	09 periods	November 2021 to January 2022		
VI- Aquaculture	13 periods	December 2021 to January 2022		
B.Sc.	Part I SEM II			
Unit	Available Lectures	Duration		
I Cell structure and cell organelles	10 periods	February 2022 to March 2022		
II Cell Organelles	14 periods	February to May 2022		
III Nucleus and chromosome	15 period	February 2022 to march 2022		
IV Cell division, Gametogenesis and Fertilization	14 period	February 2022 to May2022		

V Cleavage, Blastulation and Gastrulation in Amphioxus, Frog and chick	21 periods	March 2022 to may 2022				
VI Placentation, Parthenogenesis, Regeneration and stem cell	16 periods	April to May 2022				
B.Sc. Part II SEM IV						
Unit	Available Lectures	Duration				
I Concept of genes	14 periods	February2022 to May2022				
II Linkage	15 periods	February to April 2022				
III Sex Determination	14 Periods	February 22 to march 22				
IV Genetic Screening and Prenatal Diagnosis	15 periods	April to May 2022				
V Ecology: Concept and scope	17 periods	March to May 2022				
VI Ecosystem	15 periods	February 2022 to May 2022				
B,Sc P	art III SEM VI					
Unit	Available Lectures	Duration				
I Genetic material (DNA and RNA)	12 periods	February 2022 to March 2022				
II DNA replication	15 periods	February to May 2022				
III The Genetic code, protein synthesis and Gene regulation	15 periods	February 2022 to April 2022				
IV Mutation	15 periods	April to May 2022				
V Biotechnology : Genetic Engineering	19 periods	March to May2022				
VI Immunology	14 Periods	February to May 2022				

Perspective Plan for Co-curricular Activities 2021-22

	Perspective Plan for Co-curricular Act	1
Sr. No.	Activity	Tentative Duration
1.	Induction program of B.Sc I	September 2021
2.	Ozone Day celebration	September 2021
3.	Wild Life Week Celebration	October 2021
4	Fishery Day	November 2021
5.	International Day For elimination of violence against women	November 2021
6.	AIDS day celebration	December 2021
7.	Zoological Study circle formation	December 2021
8.	Any one Exention Activity	January 2022
09.	Celebration of death anniversary of scientist Carl Linnaeus	January 2022
10.	Earnest Hackel Birth Anniversary	February 2022
11.	National Science Day celebration	February 2022
12	International Women's Day	March 2022
13	World Sparrow day	March 2022

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist.- Buldana

Department of Computer Science

Perspective Plan for Curriculum Implementation 2021-2022

Sr. No. Unit Available Lectures Duration	_	B.Sc Part I SEM I					
Fundamentals of Information Technology	Sr. No.	Available					
Fundamentals of Information Technology	D1.110.	Unit		Duration			
Introduction to Internet	1			September 2021 to January 2022			
Programming Concept	2	Operating System	12 Lectures	September 2021 to January 2022			
Sr. No. Unit Available Lectures September 2021 to January 2022	3	Introduction to Internet	12 Lectures	September 2021 to January 2022			
September 2021 to January 2022	4	Programming Concept	12 Lectures	September 2021 to January 2022			
B.Sc Part 11 SEM II			12 Lectures				
Sr. No. Unit Lectures September 2021 to January 2022	6	•					
Duration Lectures September 2021 to January 2022		B.		Ш			
Data Structure 12 Lectures September 2021 to January 2022	Sr. No.	Unit		Duration			
Queue and Linked List 12 Lectures September 2021 to January 2022							
Tree Sorting and Searching 12 Lectures September 2021 to January 2022							
4 Object Oriented Programming 5 Function in C++ 6 Operator Overloading 6 Unit							
September 2021 to January 2022				· ·			
Sr. No. Unit Available Lectures September 2021 to January 2022		<u> </u>		· ·			
Sr. No. Unit Available Lectures September 2021 to January 2022							
Sr. No. Unit Lectures September 2021 to January 2022	6	, ĕ					
Introduction to NET Framework 12 Lectures September 2021 to January 2022		В.		. V			
Introduction to.NET Framework 12 Lectures September 2021 to January 2022	Sr. No.	Unit		Duration			
Introduction to visual Programming 12 Lectures September 2021 to January 2022							
Programming							
3	2		12 Lectures	September 2021 to January 2022			
Introduction to JAVA 12 Lectures September 2021 to January 2022			10 1	G . 1 2021 . Y 2022			
5 Classes and Inheritance 6 String, Package and Interface 7 String, Package and Interface 8 September 2021 to January 2022 8 September 2021 to January 2022 8 September 2021 to January 2022 8 September 2021 to January 2022 8 September 2021 to January 2022 8 September 2021 to January 2022 8 September 2021 to January 2022 8 Duration 1 HTML 12 Lectures February 2022 to May 2022 9 Style Sheet 12 Lectures February 2022 to May 2022 9 Array, Pointer and String 12 Lectures February 2022 to May 2022 9 Functions 12 Lectures February 2022 to May 2022 9 Structure, Union and File 12 Lectures February 2022 to May 2022 9 Structure, Union and File 12 Lectures February 2022 to May 2022 10 Array and Pointer 12 Lectures February 2022 to May 2022 11 Array and Pointer 12 Lectures February 2022 to May 2022 12 Inheritance 12 Lectures February 2022 to May 2022 13 Virtual Function and 12 Lectures February 2022 to May 2022 14 Introduction to XML 12 Lectures February 2022 to May 2022							
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4 Introduction to XML 12 Lectures February 2022 to May 2022							
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6	XML Schemas	12 Lectures	February 2022 to May 2022
	В.	ScPart III SEM	VI
Sr. No.	Unit	Available Lectures	Duration
1	Functions	12 Lectures	February 2022 to May 2022
2	PL/SQL	12 Lectures	February 2022 to May 2022
3	Securities of Database	12 Lectures	February 2022 to May 2022
4	Dialog Box Control	12 Lectures	February 2022 to May 2022
5	Mouse and Control	12 Lectures	February 2022 to May 2022
6	Working With Files	12 Lectures	February 2022 to May 2022

Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Activity	Tentative Duration
01	Poster Competition	20/10/2021
02	Seminar Competition	2/12/2021
03	IT Company Visit	27/01/2022
04	National Science Day	28/02/2022
05	Guest Lecture	6/03/2022

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist.- Buldana

Department of Physics

Perspective Plan for Curriculum Implementation 2021-2022

	B.Sc Part I SEM I					
Sr. No.	Unit	Available Lectures	Duration			
1	Kepler's laws of planetary motion and Gravitation	12 Lectures	September 2021 to January 2022			
2	Motion of rigid body	12 Lectures	September 2021 to January 2022			
3	Simple harmonic motion	12 Lectures	September 2021 to January 2022			
4	Superposition of S.H.M., Ultrasonics	12 Lectures	September 2021 to January 2022			
5	Elasticity	12 Lectures	September 2021 to January 2022			
6	Kinematics of moving fluid and surface tension	12 Lectures	September 2021 to January 2022			
	B.Sc	Part II SEM	Ш			
Sr. No.	Unit	Available Lectures	Duration			
1	Mathematical background and Electrostatics	12 Lectures	September 2021 to January 2022			
2	Magnetostatics and Maxwell's equation	12 Lectures	September 2021 to January 2022			
3	Solid state electronics devices-I	12 Lectures	September 2021 to January 2022			
4	Solid state electronics devices-II	12 Lectures	September 2021 to January 2022			
5	Special theory of Relativity	12 Lectures	September 2021 to January 2022			
6	Atmosphere and Geophysics	12 Lectures	September 2021 to January 2022			
	B.Sc	Part III SEM	V			
Sr. No.	Unit	Available Lectures	Duration			
1	Quantum mechanics	12 Lectures	September 2021 to January 2022			
2	Schrodinger's equation and applications	12 Lectures	September 2021 to January 2022			
3	Atomic and molecular Spectroscopy	12 Lectures	September 2021 to January 2022			
4	Nuclear Physics	12 Lectures	September 2021 to January 2022			
5	Hybrid parameters and transistor amplifier	12 Lectures	September 2021 to January 2022			
6	Feedback in Amplifier, oscillators and multivibrators	12 Lectures	September 2021 to January 2022			
	B.Sc.	-Part I SEM I	I			
Sr. No.	Unit	Available Lectures	Duration			
1	Ideal gas, real gas, and transport phenomena in gases	12 Lectures	February 2022 to May 2022			
2	The laws of Thermodynamics	12 Lectures	February 2022 to May 2022			
3	Liquefication of gases and thermodynamic relation	12 Lectures	February 2022 to May 2022			
4	Motion of charged particles in electric and magnetic field	12 Lectures	February 2022 to May 2022			
5	Network theorems; Ballistic galvanometer, varying current	12 Lectures	February 2022 to May 2022			

6	Alternating currents	12 Lectures	February 2022 to May 2022			
	B.Sc Part II SEM IV					
Sr. No.	Unit	Available Lectures	Duration			
1	Geometrical optics & interference	12 Lectures	February 2022 to May 2022			
2	Diffraction of light	12 Lectures	February 2022 to May 2022			
3	Polarization of light	12 Lectures	February 2022 to May 2022			
4	LASER	12 Lectures	February 2022 to May 2022			
5	Fiber optics	12 Lectures	February 2022 to May 2022			
6	Renewable energy sources	12 Lectures	February 2022 to May 2022			
	B.ScPart III SEM VI					
Sr. No.		Available				
511101	Unit	Lectures	Duration			
1	Unit Statistical mechanics (Maxwell's Boltzman statistics)		Duration February 2022 to May 2022			
	Statistical mechanics (Maxwell's	Lectures				
1	Statistical mechanics (Maxwell's Boltzman statistics) Bose-Einstein statistics and Fermi-	Lectures 12 Lectures	February 2022 to May 2022			
1 2	Statistical mechanics (Maxwell's Boltzman statistics) Bose-Einstein statistics and Fermi-Dirac statistics	Lectures 12 Lectures 12 Lectures	February 2022 to May 2022 February 2022 to May 2022			
2	Statistical mechanics (Maxwell's Boltzman statistics) Bose-Einstein statistics and Fermi-Dirac statistics Crystallography	Lectures 12 Lectures 12 Lectures 12 Lectures	February 2022 to May 2022 February 2022 to May 2022 February 2022 to May 2022			

Perspective Plan for Co-curricular Activities 2021-22

Sr. No.	Activity	Tentative Duration
01	Hiroshima and nagasaki day 06/08/2021	
02	Seminar competition	29/01/2022
03	National science day	28/02/2022
04	Guest lecture	9/03/2022

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde Incharge Principal

Shri. Krushnarao Ingle (Ex MLA)
President

Phone: 07266-237126

visit us at : www.acscwb.co.in

Email: 327accwb@gmail.com

Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

1.1.1 The institution ensures effective curriculum delivery through a well-planned and documented process

Personal Time Table Session-2021-2022

Supporting Documents F

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

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Shri. Krushnarao Ingle (Ex MLA)
President

Email: 327accwb@gmail.com

CERTIFICATE

This is to certify that the documents attached as supporting documents for Criterion I: Curricular Aspects are verified from the college record and found to be correct to the best of my knowledge.

Principal
Arts & Commerce College,
Warvat Bakal Dist. Buldana

	Department of English							
	Time Table (BA) 2021-22							
Name of to	Name of teacher: Mr. NISHIGANDH SATAV Subject: ENGLISH							
Period	1	2	3	4	5	6		
Day/Time	11:00 - 11:48	11:48 -12:36	12:36 1:24	1:34 - 2:22	2:22 - 3:10	3:10 - 3:58		
MON	BA I		BA III	BA II		BA III (T)		
TUE	BA III			BA I	BA II (T)	BA I (T)		
WED	BA II		BA I	BA III	BA II (T)	BA III (T)		
THUS	BA III (T)	BA II			BA I (T)	BA II (T)		
FRI	BA II	BA I			BA I (T)	BA II (T)		
SAT	7.30 - 8.18	8.18 - 9.06	9.06 - 9.54	10.04-10.52	10.52 - 11.40	11.40 - 12.28		
SAI			BA I (T)	BA III	BA III (T)			

Time Table (B.Com & B.Sc) 2021-22								
Faculty: Mr. NAGESH INGLE Subject: ENGLISH								
Period	1	2	3	4	5	6		
Day/Time	11:00 -11:48	11:48 - 12:36	12:36 1:24	1:34 - 2:22	2:22 - 3:10	3:10 - 3:58		
MON	B.Com I			B.Com III	B.Com II	B.Com I (T)		
TUE	B.Com I			B.Sc I	B.Com I (T)	B.Com I (T)		
WED	B.Com I			B.Sc I		B.Com I (T)		
THUS	B.Com I		B.Com III	B.Sc I		B.Com I (T)		
FRI	B.Com II			B.Sc I	B.Com I (T)			
SAT	7.30 - 8.18	8.18 - 9.06	9.06 - 9.54	10.04-10.52	10.52 - 11.40	11.40 - 12.28		
	B.com II		B.Com III	B.Com I (T)		B.Sc I (T)		

Head, Dept. of English Arts & Commerce College Warvat Bakal

	Department of Marathi									
	Time Table (BA) 2021-22									
Faculty: N	Faculty: Mr. Anand Dhundale Subject: MARATHI & MLT									
Period	1	2	3	4	5	6				
Day / Time	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	1:34 to 2:22	2:22 to 3:10	3:10 to 3:58				
MON		I(MAR)	II (MLT)	III (MLT)		I (MLT)				
TUE	II (MLT)	III (MAR)	I (MLT)			III (MLT)				
WED	I (MAR)	III (MLT)			I (MLT)	II (MLT)				
THUS			II (MLT)	I (MLT)		III (MLT)				
FRI	III (MAR)	III (MLT)	I (MAR)							
SAT		I (MAR)	II (MLT)		I (MLT)					



	Department of Economics									
		Time Ta	able (BA) 2021	1-22						
Faculty: DR. S	UBHASH GUR	JAR		Subject: ECO	NOMICS					
Period										
Day / Time	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to				
Day / Time	11:48	12:36	1:24	2:22	3:10	3:58				
MON	BA III		BA I		BA II					
TUE		BA II	BA III							
WED			BA II	BA I						
THUS	BA I		BA III							
FRI		BA II		BA I		BA III				
	7.30 to 8.18	8.18 to	9.06 to	10.04 to	10.52 to	11.40 to				
SAT	7.50 10 8.18	9.06	9.54	10.52	11.40	12.28				
	BA I	BA II		BA II						

Head, Dept. of Economics Arts & Commerce College Warvat Bakal

Department of Political Science

Time Table (BA) 2021-22

		IIIIC I a	Table (B11) 2021-22						
Faculty: DR.	RAJENDRA	KORDE	Subject: POLITICAL-SCIENCE						
Period 1		1 2		1 2 3 4		5	6		
Day / Time	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to 3:10	3:10 to			
Day / Time	11:48	12:36	1:24	2:22	2.22 to 3.10	3:58			
MON	BA II	BA III			BA I				
TUE	BA I		BA II	BA III					
WED		BA I	BA III						
THUS	BA III	BA I	BA II						
FRI			BA II	BA III					
	7.30 to 8.18	8.18 to	9.06 to	10.04 to	10.52 to	11.40 to			
SAT	7.50 10 8.18	9.06	9.54	10.52	11.40	12.28			
	BA II			BA I					

Dr. Rajendra S. Korde Head of Dept. Political Science Art & Commo Collage Warvat (B) Tq. Sangrampur Dist Buldhana

Department of History Time Table (BA) 2021-22

	Time Tuble (D11) 2021 22							
Faculty: DR.	SUBHASH PA	WAR			Subject: H	ISTORY		
Period	1	2	3	4	5	6		
Day / Time	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to 3:10	3:10 to		
Day / Time	11:48	12:36	1:24	2:22	2.22 10 3.10	3:58		
MON		B.A. II		B.A.I	B.A. III			
TUE		B.A. I		B.A. II	B.A. III			
WED	B.A. III				B.A.II	B.A. I		
THUS	B.A. II	B.A. I						
FRI	B.A. I		B.A. III					
	7.30 to 8.18	8.18 to	9.06 to	10.04 to	10.52 to	11.40 to		
SAT	7.30 10 6.16	9.06	9.54	10.52	11.40	12.28		
	B.A. III	B.A. II						

H.O.D (HISTORY) Arts & Commerce College Warvat Bakal, Dtst. Buldana

		Depa	rtment of C	ommerce		
		Time T	able (B.Con	n.) 2021-22		
Faculty: D	R. SATISH		Subject : BEC.		MA,I&WW	W
Period	1	2	3	4	5	6
D / TE:	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	2.10 / 2.50
Day / Time	11:48	12:36	1:24	2:22	3:10	3:10 to 3:58
MON	II	III	I		III	
TUE	II	III	I		III	
WED	II	III	I		III	
THUS	III	I	II		III	
FRI	III	I	II		II	
Period	1	2	3	4	5	6
Day / Time	07:30 to	08:18 to	09:06 to	10:04 to	10:52 to	11:40 to
	08:18	09:06	09:54	10:52	11:40	12:28
SAT		III	II			
Faculty: N	Ar. Suresh E	Bhaltadak	S	ubject :FAC	,IFS,ITB,BS	T,EOD
Period	1	2	3	4	5	6
Day / Time	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to 3:58
Day / Time	11:48	12:36	1:24	2:22	3:10	5:10 to 5:58
MON	III (EOD)	I (FAC)		II (IFS)		II (ITB)
TUE	III (EOD)	II(IFS)	II (ITB)	I (FAC)		II (BST)
WED	III (EOD)	I (FAC)	II (BST)	II (ITB)		
THUS	II (ITB)	III (EOD)		II (IFS)	II (BST)	
FRI		III (EOD)	I (FAC)	II (IFS)		
Day / Time	07:30 to	08:18 to	09:06 to	10:04 to	10:52 to	11:40 to 12:28
	08:18	09:06	09:54	10:52	11:40	
SAT	I (FAC)	II (IFS)		II (ITB)		
Faculty: D	r. Sanjay Ta	ale	Sul	b <mark>ject:</mark> PBO, I	PBM, CFS-I/	II,BRFC,
CLAW, EC	DE-I/II, COA	, CAT				
Period	1	2	3	4	5	6
Day /	11:00 to	11:48 to	12:36 to	1:34 to	2:22 to	3:10 to 3:58
Time	11:48	12:36	1:24	2:22	3:10	3.10 to 3.36
MON		B.Com II	B.Com III	B.Com I	B.Com I	
TUE		B.Com I	B.Com III	B.Com III	B.Com II	
WED		B.Com II	B.Com III	B.Com III	B.Com I	
THUS		B.Com II	B.Com I	B.Com III	B.Com I	
FRI	B.Com I	B.Com II	B.Com III	B.Com III		
Day/	07:30 to	08:18 to	09:06 to	10:04 to	10:52 to	11:40 to 12:28
Time	08:18	09:06	09:54	10:52	11:40	
SAT	B.Com III	B.Com I		B.Com III		2 Table 12 Table 14
						Head of the Department

						epartment								
					Ti	me Table (B.Sc)							
Faculty:		yanand l			-	4	1	•	ect: Cl		•		0	0
Period	1		2	3		4		5	6)	7	2.	8	9
Day /	8:00	to 8	:48 to	9.36 to 11:00 to		11	11:48 to 12:30		6 to	2:30 to		18 to 4:6	3: to	
Time	8:4		9:36	10:2		11:48		2:36	1:2.3		3:18		4.0	4:54
Time	(P))	(P)	(P)		11.40	1	2.50	1.2	-	(P)		(P)	(P)
MON	II (I	P)]	II (P)	II (P	P)	II (T)							(-)	
TUE	II (I		I (P)	II (P	P)	` '								
WED	III (P) I	II (P)	III (I	2)						III (P)	II	II (P)	III (P)
THUS	III (P) I	II (P)	III (I	2)				I (Γ)	III (P)	II	II (P)	III (P)
FRI	I (P	')	I (P)	I (P)				I (,	I (P)]	(P)	I (P)
						8.00-8.45		9.00-	10.0				ctical	
						0.00 0.15	0	9.45	10.	45	1	0.04	to 2.52	T (T)
CAT								II (Tr)			I(P) & I	I (P) & I	I (P)
SAT							111	(T) II			(P)		(P)	& I (P)
Faculty:	Mr. Kin	on Sobo	lo.						Subi	ot. Cl	nemistry			(F)
Perio		<u>an Sava</u> 1	16	2		3			<u> Ծաթյա</u> 1	ct. CI	5			6
1 (11)	, d	Pract	ical				Т	heory	•			\dashv		ctical
		8 t		11:00	to	11:48			66 to		24 : 22=			
Day / T	ime	10:24	-	11:4		12:36			24	1	:34 to 2:22		2:22 to	4:46(Pr)
MON		II(B						I(Τ)				II(B ₂)
TUE		II(B				I(T)					<u> </u>		II(B ₂)
WED		III(C	C_1			III(T))							(C_2)
THUS		III(C				III(T))						III((C ₂)
FRI		I(A	1)					II(T)						-
CAT				7:30		8:18 to 9	9:06	9:06 to	9:54	10:	04 to 12:2	8	12:28 to	
SAT				8:18	•					DC	c-I(P)(A ₁)			:52
Faculty:	Dr V D	Ingale							Sub	_	Chemistry			
Period Period	<u> </u>	1 1		2		3		4		<u>5</u>	lemsuy		6	
Day /	08:	:00 to		00 to	1	1:48 to		36 to		24 to		2.20		1
Time		0:24		:48		12:36		1:24		:22		2:30) to 4:54	+
MON	I (P) B ₁										I ((P) B ₂	
TUE		P) B ₁	III	(T)								I ((P) B ₂	
WED		P) C ₁				III (T)								
THUS		P) C ₁				II (T)								
FRI	I ()	P) A ₁				2.40	II	(T)			11.00		(P) A ₂	
Day /				0 to	1	8:18 to	9:06	to 9:54			11.00 to	О	124.0	to
Time SAT				:18 (T)		9:06					1.24 I (P) A		3.48 I (P) A	
		1 0 01		(1)				G 1 .	4 67	• ,		1]	1(1) F	12
Faculty: 1			elke					Subjec	et: Ch					
Period		1		2		3		4			5		6	
	Practi					-	Γheor	•					ctical	
Day/	8 to 10:	24	11:0	0 to 11:48		11:48 to	12:	36 to 1:24	1	1:34 to	2:22	2:22	to 4:46	(Pract.)
Time	(pract)					12:36								
MON	II (Pra	ct) B-1										II (P	ract) B-	-2
TUE	II (Pra	ct) B-1	III(Theory)					-+			II (P	ract) B-	-2
WED	· ·		+ `		-		Щ	Theory)	-+				Pract) C	
THUS			+				+	5 /	+				Pract) C	
FRI	I (Prac	t) A ₋ 1	III	Theory)	+				-+				act) A -	
TIM	1 (1140	-, 11 1		- 8:18	\perp	8:18 - 9:06	Q·1	6 - 10:04	1	10:04-			8 -2:52	
SAT				Theory)	+	2.10 7.00	7.1	2 10.0-			et) A-1		act) A-2	2
5/11	l		1 (THEOLY)			-			. (11ac	(t) 11-1	1 (11		
												agi.	II.Dai di	विभाग प्रमुखं हाविद्यालय

			Department			
			ime Table (B			
	Ir. Santosh Mhas				ıbject : Botany	T -
Period	1	2	3	4	5	6
	Practical		Theo	ory 12:36 to	,	Practical
Day/Time	8:30 to 10:54	11:00 to 11:48	12:36	1:24	1:34 to 2:22	2:30 to 4:54
MON			III (T)			I (Pract.) Batch:(C+D)
TUE	I (Pract.)					
	Batch:(A+B)					
WED	II (Due et)					II (Pract.) Batch:(C+D+E)
THUS	II (Pract.) Batch:(A+B)		I(T)			
FRI	Daten.(71+B)	I(T)				III (Pract.) Batch:(C+D+E)
		` ′	0.10 0.00	9:16 -	10.04.12.20	12:28 -2:52
		7:30 - 8:18	8:18 - 9:06	10:04	10:04-12:28	2.30-4.54
SAT			I(T)			III (Pract.) Batch:(C+D+E
Faculty: D	r. Kishor Theng			Su	bject: Botany	
Period	1	2	3	4	5	6
	Practical		Theo		1	Practical
Day/	8:30 to 10:54	11:00 to 11:48	11:48 to	12:36 to	o 1:34 to 2:22	2:30 to 4:54
Time	I (Duo = t)		12:36	1:24		
MON	I (Pract.) Batch:(A+B)		I(T)			
TUE	Daten.(A+D)	I(T)				I (Pract.) Batch:(C+D)
WED	II (Pract.)	, ,				T(Truett) Buteni(C+B)
	Batch:(A+B)	I(T)				
THUS		III(T)				II (Pract.) Batch:(C+D+E)
FRI	III (Pract.)			III(T)		I (Pract) A -2
	Batch:(A+B)			` `		` '
a		7:30 - 8:18	8:18 - 9:06	9:16 -	10:04-12:28	12:28 -2:52
SAT				10:04		2.30-4.54 III (Pract.) Batch:(C+D+E
E 4 D	D 1 (G 1	D .	III (Flact.) Batch.(C+D+E
	r. Dnyaneshwar S	1		Sut	oject: Botany	
Period	1	2	3		4	5
Day / Time	8:30am- 10:54am	11:00 to 11:48	11:48 to	12:36	12:36 to 1:24	02:30-04:54
MON	I (P)				II (T)	I (P)
TUE	1(1)		11 /7	r)	11(1)	1(1)
		H (T)	II (7	1)		H (D)
WED	H (D)	II (T)				II (P)
THUS	II (P)					
FRI						III (P)
Day/	07:30am-	8:28 am to	9:16 am to	10:04am		11:40am-02:04pm
Time SAT	08:28am	9:16am	III /'	T)		III (D)
			III (*			III (P)
	r. Nandkishor M	1	ı	Subject	: Botany	1
Period	l 1	2	3		4	5
Day/ Time	Practical 8:30 to 10:54	Theory 11:00 to 11:48	Practica 11:48 to 1		12.26 to 1.24	2:30 to 4:54
MON	6.50 to 10:54	11.00 to 11:48	11:48 t0 1.	۷.30	12:36 to 1:24	I (Pract.) Batch:(C+D)
	I (Pract.)			+		1 (1 fact.) Datch.(C+D)
TUE	Batch:(A+B)				III (T)	
WED	(-1.2)			1	III (T)	II (Pract.) Batch:(C+D+E)
	II (Pract.)					I (Truck) Butter (C+D+E)
THUS	Batch:(A+B)				II (T)	
FRI			II (T)			III (Pract.) Batch:(C+D+E
				+		12:28 -2:52
SAT		7:30 - 8:18	8:18 - 9:06		9:16 - 10:04	2.30-4.54
~111		II (T)				III (Pract.) Batch:(C+D+E
	i	- \ - /				, ,

		Tim	e Table (BSc) 2	021-22		
Faculty: Dr. N	M P Solanko	1 1111		: Zoology		
Period Period	PRACTICAL	1	2	3	4	PRACTICAL
Day / Time	8.00-10.24	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	1:34 to 2:22	2:30 to 4.14pm
MON		II (T)	12.30			III (P)
TUE	III(P)					
WED						I(P)
THUS	I(P)	II (T)				
FRI				III(T)		II(P)
SAT		7.38 to 8.18	8.18 to 9.06	9.06 to 9.54 am	Practical (batch I) 10.04 to12.28	Practical (II batch) 12.28 to 2.52
				I (T)		II(P)
Faculty: Dr.N	Iadhuri S. Hingan	kar	Subjec	t: ZOOLOGY	Ш	
Period	PRACTICAL	1	2	3	4	PRACTICAL
Day / Time	08.00 to 10.24	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	1:34 to 2:22	2:30 to 4.54
MON	III (Pr.)			III (Th.)		
TUE			III (Th.)			III (Pr.)
WED				I (Th.)		I (Pr.)
THUS	I (Pr.)	I (Th.)				
FRI	II (Pr.)	II (Th.)				
SAT		7.30 to 8.18	8.18 to 9.06	9.06 to 9.54 am	Practical 10.04 - 12.28 pm	Practical 12.28 to 2.52 pm
					II (Pr.)	
	Miss Sonali Anil Ta	ayade	Subject: Zo		1	D(*1
Period	Practical 8.20 to 11	1 11:00 to	2 11:48 to	3	4	Practical
Day / Time		11:48	12:36	12:36 to 1:24	1:34 to 2:22	2:30 to 5:10
MON	III(P)	I(T)				
TUE				I(T)		III (P)
WED	I(P)		II (T)			
THUS				III (T)		I (P)
FRI						II (P)
		1	2	3	Practical	Practical
SAT		7.30 to 8.18 AM	8.18 to 9.06 AM	9.06 to 9.54 AM	10.04 to 12.28 PM	12.28 to 2.52PM
			II (T)			II(P)
FACULTY: N	Mr. Sushil Deshm	ukh	Subject:	Zoology		
Period	PRACTICAL	1	2	3	4	PRACTICAL
Day / Time	08.00 to 10.24	11:00 to 11:48	11:48 to 12:36	12:36 to 1:24	1:34 to 2:22	2:30 to 4.54
MON						III (Pr.)
TUE	III (Pr.)	II (Th.)				•
WED	I (Pr.)	III (Th.)				
THUS	. ,					I (Pr.)
FRI	II (Pr.)			I (Th.)		. /
SAT		7.30 to 8.18	8.18 to 9.06	9.06 to 9.54 am	Practical 10.04 - 12.28 pm	Practical 12.28 to 2.52 pm
		III (Th.)			II (Pr.)	

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde Incharge Principal

Phone: 07266-237126 visit us at: www.acscwb.co.in

Shri. Krushnarao Ingle (Ex MLA)
President

Email: 327accwb@gmail.com

Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

1.1.1 The institution ensures effective curriculum delivery through a wellplanned and documented process

Academic Diary Session-2021-2022

Supporting Document - G

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde Incharge Principal Shri. Krushnarao Ingle (Ex MLA) President

Email: 327accwb@gmail.com

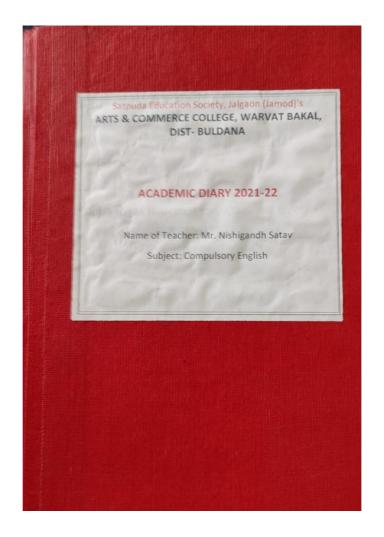
Warvat Bakal Dist.Buldana

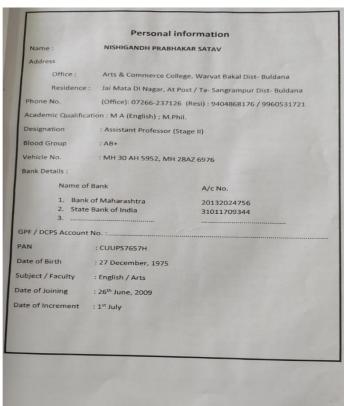
Phone: 07266-237126

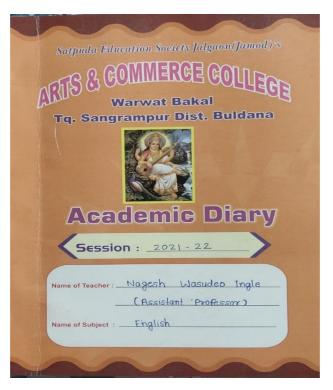
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CERTIFICATE

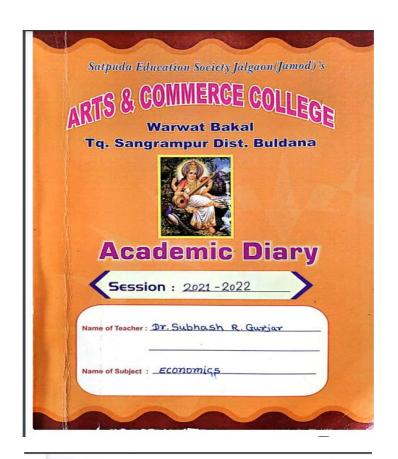
This is to certify that the documents attached as supporting documents for Criterion I: Curricular Aspects are verified from the college record and found to be correct to the best of my knowledge.



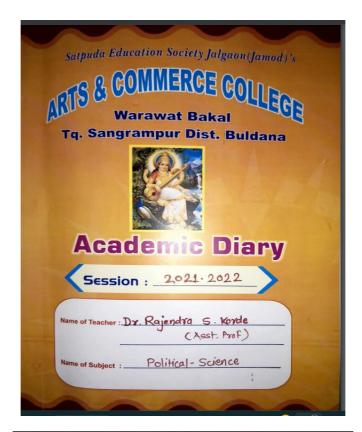




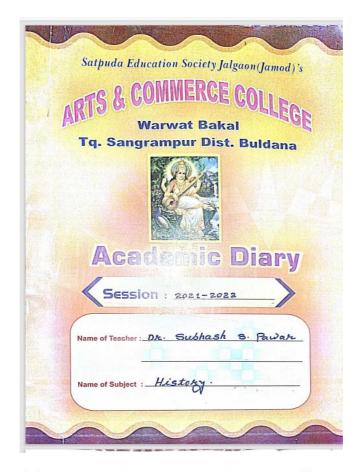
	PERSONAL INF	
Name: Mr. Nag	esh Wasudeo I	ngle.
Shai. So	marth Nagar, No	ear Sarswall college Shegaon
ome Antia Com	merce college, h	lonvad Bakal
Residence Shatis 6	amarth Magar.	shogaon
Phone No. (office)		(Res.)
Academic Qualification	1. A. CENYD, B.Ed.	SET
Designation ASSIST	int Professor	
Vehicle No. MH = 3	0 - 4873	
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Date of Birth	August 1985 High Commerce, 12 - 2019	sclence)
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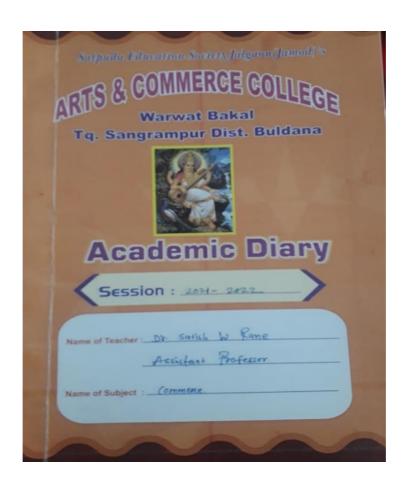
PE	RSONAL IN	FROMATION	
Name: Dr. Subhash	Ramchandr	a Gurjar	
Address At-Pasti-Warr	at Bakal 72 :	Sangrampur a	ist :- Buldana
office Arts & Commer	rce College, V	Nazvat Bakal	
Residence Warvet Ba			
Phone No. (office)		(Res.) .94235	112821
Academic Qualification	(MAR, SDC, ECO	m.phil, ph.d. s	et (Eco)
Designation Assistant	Professor		
Blood Group Btve			
Vehicle No	1.0763		
Bank Account	Bank Name	A/c No.	
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Sangrampur			
G.P.F. Account No			
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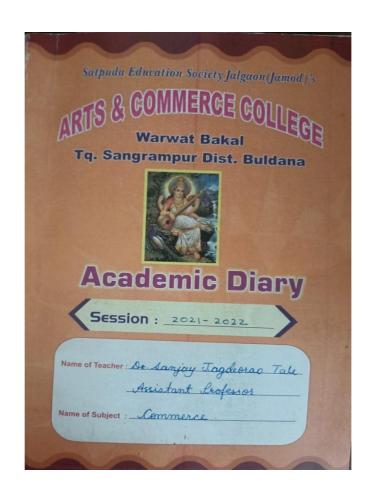
	PERSONAL INFROMATION
	Name: Dr. Rajendra Shnizampant Korde
1	Address 33" Sthrikmipo' Muktai Nagat SBI Coloney Shegaon
ı	Office Ast & Comm College Warwal-Bakal
١	Residence 33 Shrikrupa' Muklau Hagat S131 Culoney, Shegaen
١	Phone No. (office) 07266-295243 (Res.) 9420446022
ı	Academic Qualification
ı	Designation Assistant - Prof.
ı	Blood GroupART
l	Vehicle No. MH 28 AN 2569
l	Bank Account Bank Name A/c No.
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١	G.P.F. Account No. 6760
١	Income Tax (a) PAN ATION K2865P (b) L.I.C.
l	Identification Mark Totton my Name 'Rajondra' Right Hand
ı	Date of Birth 13-12-1969
l	Subject/Faculty Political-Science
	Date of joining 13 Sep 1996
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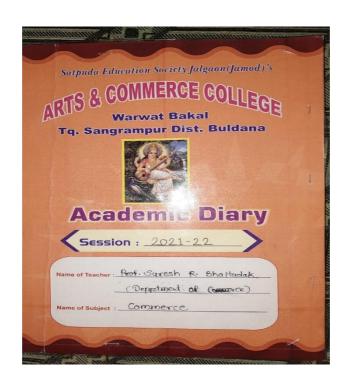
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	Commence College, Warral - Ba	
	nuklai Nogar Shigaon, oxist: 5	
Phone No. (office)		
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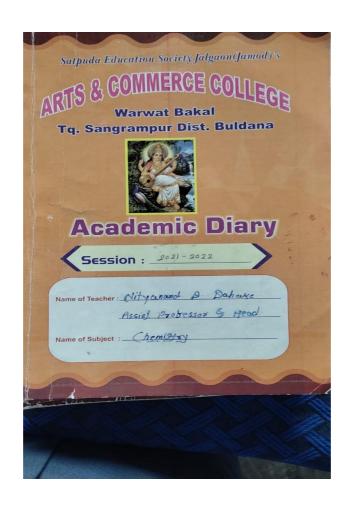
Name: Dr. Sulich Wasudee Pane Address 18ts and Commerce College Waswat Bakal Dis Buldana Residence At Ass Waswat Bakal Dist Buldana Residence At Ass Waswat Buldana Residence At Ass Wa	PERSONAL	INFROMATION
Address Arts and Commerce College Warnat Bakal Dis Buldana Office 1945 and Commerce College Warnat Bakal Dis Buldana Residence At Past Warnat Bakal Dist Buldana Phone No. (office) 0.7266 - 237126 (Res.) Academic Qualification Mr. Com. Mr. Phil. NET, Ph.D. Designation Assistant Professor Blood Group At Vehicle No. Bank Account Bank Name A/c No. No. 6032-899-7685 Bank of Malarashtra G.P.F. Account No. Income Tax (a) PAN CAUPR 9 252-D (b) LIC. Identification Mark Cut Mark On Right Eye Date of Birth Lb/0-7/1983 Subject/Faculty Commerce Date of senior Scale Date of Selection Grade	Name Dr. Sytish Wasuder	Rane
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Phone No. (office) Q7266 - 237126 (Res.) Academic Qualification M. Com. M. Phil. NET., P.hD. Designation ASSISTANT Professor Blood Group At Vehicle No. Bank Account Bank Name A/c No. No. 6932-8997685 Bank of Malagrashtag G.P.F. Account No. Income Tax (a) PAN CAUFR 9.252-D (b) L.I.C. Identification Mark Cut Mark On Right Eye Date of Birth Lb/07/1983 Subject/Faculty Commerce Date of Increment Date of Selection Grade	Residence At Post Warwat Bo	ukas Dist Buldana
Academic Qualification M. Com, M. Phil, NET, P.hD. Designation Assistant Professor Blood Group At Vehicle No. Bank Account Bank Name A/c No. No. 69 3 2 8 9 9 7685 Bank of Malagrashtag G.P.F. Account No. Income Tax (a) PAN CAUPR 9 2 52 D (b) L.I.C. Identification Mark Cut Mark on Right Eye Date of Birth Lb/07/1983 Subject/Faculty Commerc 9 Date of joining 09/12/2019. Date of senior Scale Date of Selection Grade	Phone No. (office) 07266 - 23712	(Res.)
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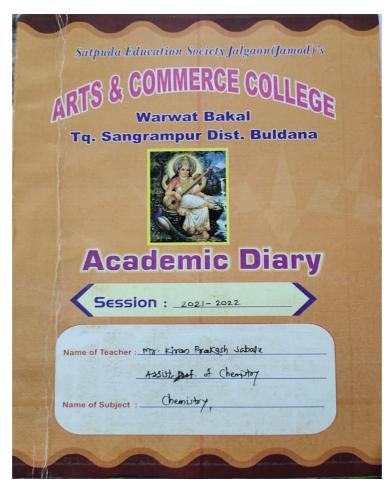
	PERSONAL INFI	ROMATION
Name:	Sanjay Jago	
Address A.E.L.	and Commerce	College Warnot Bo
Office Ask C Taluk Residence C/aA	and Commerce (a Sangsampur hok Shegokar She	Tollege Warraf Bak, Obtrict Buldana Chincheli road, goan (Res)
Academic Qualification	M. Com, M.B.A. Phs	NET.
Designation Ass	istant Projesso	<u></u>
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Vehicle NoM.H	30 7541	
Bank Account	Bank Name	A/c No.
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Name: Sursesh Ramesh Rhaltaclat. Name: Sursesh Ramesh Rhaltaclat. Address At. Sukali, Post. Gooden Ctd), To Jagoon, DM Bulthm. Address At. Sukali, Post. Gooden Ctd), To Jagoon, DM Bulthm. Address At. Sukali, Post. Gooden College, Warrat Bakal To Sangramper Office Acts & Commodice College, Warrat Bakal To Sangramper Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Bult Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, Near New Count Jalgoon (50), DM Goldhorn Residence Deshmath Glony, DM Goldhorn R		WITHOMATION
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Address At-Sukali, Post Goodeg and Chd), 19 Jagae, 19 Ja	Name: Sures	sh Ramesh Bhaltaclak
Office Asts & Composite College Workst Bokal 19 Single Phone No. (office) 07266 237126 (Res.) Phone No. (office) 07266 237126 (Res.) Academic Qualification M. Com. NET, SET, B.Ed. Designation Assistant Professor Blood Group Vehicle No. MH-28, BM 1840 Bank Account Bank Name A/c No. Bank Account Bank Name A/c No. Professor Boanch Singlempus G.P.F. Account No. Income Tax (a) PAN BTGPB35181 (b) LIC. Identification Mark Moles on chalorinal Date of Birth 25th Dec. 1983 Subject/Faculty Commosice Date of joining 10th Dec. 2019 Date of senior Scale Date of Selection Grade	0450	Kali, Post- Goder on (Kd), 19- Jaiges), tra July
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Phone No. (office) 97366 237126 (Res.) Academic Qualification M. Com. NET, SET, B.Ed. Designation Assistant Professor Blood Group Vehicle No. MH-28, BM 1840 Bank Account Bank Name A/c No. No. Bank of Meharaskting 25043701890 Beanch Sanggampus G.P.F. Account No. Income Tax (a) PAN BTGPB35181 (b) L.I.C. Identification Mark Moles on abdomind Date of Birth 25th Dec. 1383 Subject/Faculty Commerce Date of Joining 10th Dec. 2019 Date of Increment Date of Selection Grade	Desha	NUCLO Glory, Near New Court Jalgan (Ja), New Dollars
Academic Qualification M. Com., NET, SET, B.Ed. Designation Assistant Professor Blood Group Vehicle No. MH-28, BM 1840 Bank Account Bank Name A/c No. No. Bank Of Maharashtag 25049701890 Branch Singtompus G.P.F. Account No. Income Tax (a) PAN BTGPB3518L (b) L.I.C. Identification Mark Moles on abdomind Date of Birth 25th Dec. 1983 Subject/Faculty Commosce Date of joining 10th Dec. 2019 Date of senior Scale Date of Selection Grade	Phone No. (office)	7266 237126 (Res.)
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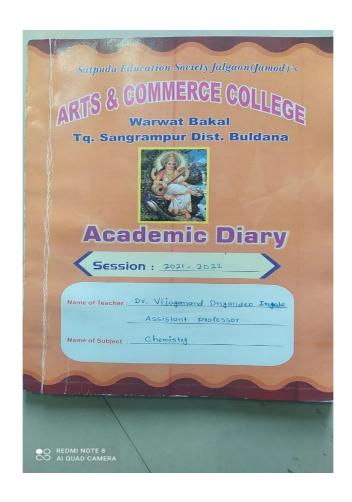


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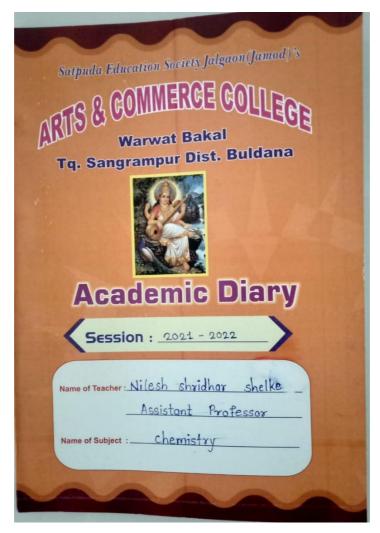


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	iran Prakash Sabale	
Address Add @	mmerce college warmed backa	0
Office At Comme	rce college corount patal. 19. So	ngrampers and Bulder
Residence		
Phone No. (office)	7266 - 287126 (Res.)	
Academic Qualification	M.Sc. (Chemistry) NET GATE	
Designation Assi	stant Professor	
	b-ve	
Vehicle No		
Bank Account	Bank Name A/c	No.
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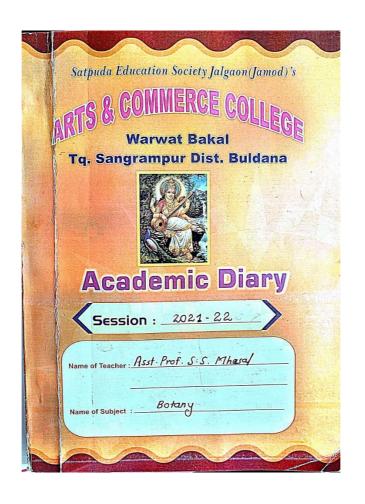
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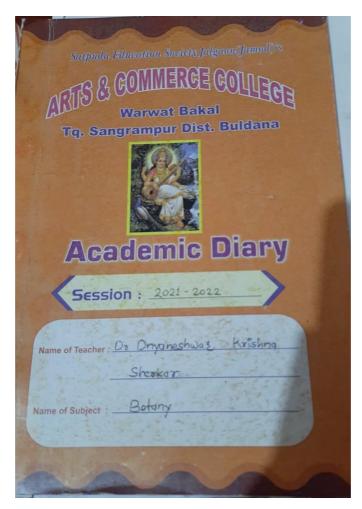
PERSONAL INFROMATION
Name: Dr. Vijaganand Ingandeo Ingale
Address Art's commerce college, Warvat Bakal
Office
Residence Warvat Bakal T9 Sangrampur Dist Buldano
Phone No. (office) (Res.) 8329285785
Academic Qualification M. Sc. B. Ed. Ph. D.
Designation Assistant protessor
Blood Group Otve
Vehicle No. 1714-28 BM-7011
Bank Account Bank Name A/c No.
No. Bonk of maharashtra 20060645767
G.P.F. Account No.
Income Tax (a) PAN AFC PI 32 22 H (b) LIC
Identification Mark Black SPDF on Left Leg
Date of Birth 05/02/1981
Subject/Faculty Chemistry
Date of joining 05 1011212019
Date of Increment
Date of senior Scale
Date of Selection Grade
Other Information



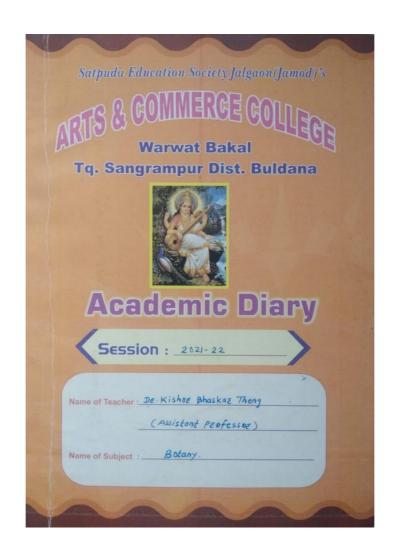
PERSONA	L INFROMATION
Name: Mr. Nilesh shai	idhar shelke
Address At :- Mahatamkhed	post-kawhla to chikhli Buldhan
office Axt and commerce	college warwat Bakal, Sangram 444202
Phone No. (office)	(Res.)
Academic Qualification M.Sc. SET	
Designation Assistant Pro	
Blood Group A +ve	
Vehicle No. MH - 28 AX 3298	
Bank Account Bank Na	
	rashtza 60179029519
G.P.F. Account No.	
	4 G (b) LIC
Identification Mark	
	L
Date of joining 40/12/20	
Date of Selection Grade	
Other Information	
Other Information	



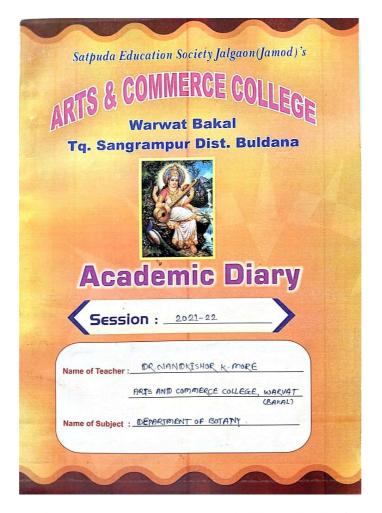
PERSONAL INFROMATION Name: Mr. Santosh Shrikeushna Mhasal. Address Mear Dalal Hospital Jalguon (Jamod) Office Arts and Commerce College, Warwat (Baka) Residence AT+RO+TQ:- Jalgaon (J), Dist: Buldhana Academic Qualification M.Sc., B.Ed., SET. Designation Assistant Professor 'O' +ve Vehicle No. MH-28 ANO335 Bank Name 25049701914 Bank Of Maharashtra Sangrampur Income Tax (a) PAN AHSPM 3428 R (b) L.I.C. Identification Mark Mole on upper arm of left hand Date of Birth 19/03/1976 Subject/Faculty Botany



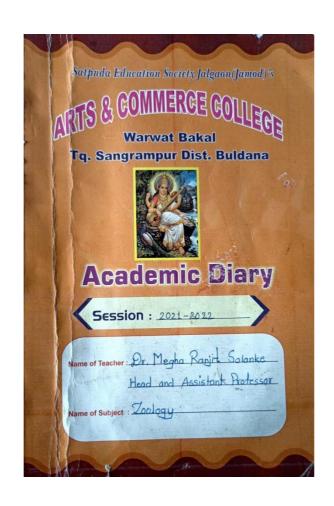
PERSONAL INFROMATION
- Leichna Sherkar
thess 201 Grokul-Unan Apportment Conjonen Convod school and, stage on Dist Bullions. See Arts, Commerce College, Warry Bakal
gress 204 Moracon. Dist Bullons. Stegeon. Dist Bullons. Bakal
sodence At Shegaon Dist-Buldana
(Res)
none No. (office) Cademic Qualification 11.5c. Ph.D.
esignation Assistant Professor
hold Group 0 + ve - childe No. M H-21 AM 4745
A/a No.
ank Account Bank 9 Mahorashtra 68017431819
s.P.F. Account No.
ncome Tax (a) PAN (a) PVPS1265 K (b) LIC.
dentification Mark 110 le on ned4
Date of Birth 15/05/1988
subject/Faculty Botany Susence
Date of joining 1 0 1 1 2 2 0 f. 9
tate of Increment
pate of senior Scale
Date of Selection Grade
Other Information



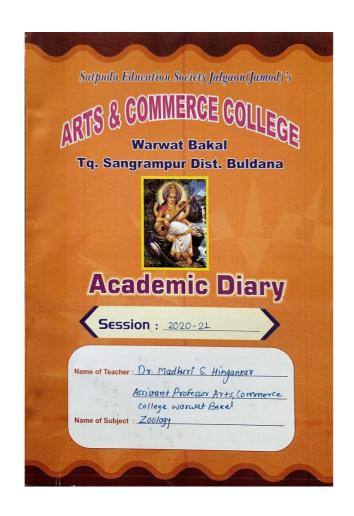
Academic Qualification M-SC-, B-Ed-, Ph-D .	Buldana pi 444202 (Res)
office Asts & Commerce College No residence At Past: Wasvat Bakal Di- Phone No. (office) Academic Qualification M.S.C., B.F.d., Ph.D.	Buldana pi 444202 (Res)
office At's & Commerce College No residence At's st: Wasvat Bakal Di-	Buldana pi 444202 (Res)
tesidence At past: Wasvat Bakal Di- ohone No. (office)	Buldana pi 4442.02
Academic Qualification M.SC., B.Ed., Ph.D.	
Academic Qualification M.SC., B.Ed., Ph.D.	
Designation Assistant Professor.	
Blood Group	
Vehicle No. MH - 28 - 9964	
Bank Account Bank Name	A/c No.
No Bank of Mahazashtza.	(8025722138 .
G.P.F. Account No.	
Income Tax (a) PAN APHPT4895 G	(b) L.I.C
Identification Mark Moles on chick	
Date of Birth 23/05/1385.	
Subject/Faculty Botany / Science.	
Date of joining 16/12/26/9.	
Date of Increment	
Date of senior Scale	
Date of Selection Grade	
Other Information	



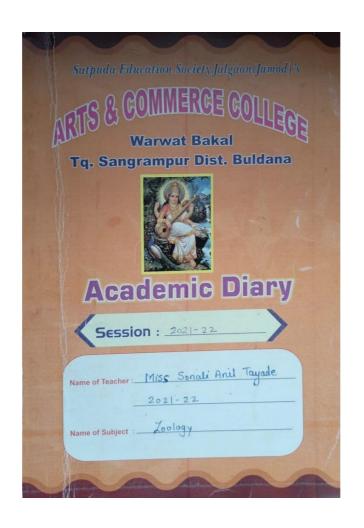
mp.	alandkishor Keshavra	o more	
Name:	of Butony, Ants & com	merce college	warrat Ba
OfficeArts or	nd commerce college, wor	wat Bakal	3 11
Residence At	post warrat Bakal To	1. sangrampur	Dist. Bulgar
Phone No. (office)	9921494198	(Res.)	
Academic Qualificat	ion M·sc; B·Ed·, ph·D·		
Designation	ssistemt professor		
	AB TYE		
Bank Account	Bank Name	A/c No.	
	Bank of exchanashtra	6000 246	2,900
No			
G.P.F. Account No.			
Income Tax (a) PAI	CMBPMO816R	(b) L.I.C	
Income Tax (a) PAI	nonk present on a	gbt Byebrow	
Income Tax (a) PAI Identification Mark	N CMBPM0816R 	gbt Eyebrow	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty	N CMBPMO816R MO101 PRESENT ON NO 10/03/1984 BACTNY/Science	(b) LIC gbt Eyebrow	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining	0 ствртовия помы рессти т т 10/03/1984 Вщету/Science 10/12/2013	(b)LIC gbt Byebrow	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining	N CMBPMO816R MO101 PRESENT ON NO 10/03/1984 BACTNY/Science	(b)LIC gbt Byebrow	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining Date of Increment	0 ствртовия помы рессти т т 10/03/1984 Вщету/Science 10/12/2013	(b) L.I.C.	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining Date of Increment Date of senior Sca	0 ствртовия помы рессти т т 10/03/1984 Вщету/Science 10/12/2013	(b) LIC.	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining Date of Increment Date of senior Sca Date of Selection (0 ствртовия потк ресст от т 10 103/1984 Вцету / Science 10 /12/2019	(b) LIC.	
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Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining Date of Increment Date of senior Sca Date of Selection (N. CMSPMO816R Mark Present のか 10/03/1984 Bayany / Science 10/12/2019	(b) LIC.	
Income Tax (a) PAI Identification Mark Date of Birth Subject/Faculty Date of joining Date of Increment Date of senior Sca Date of Selection (N. CMSPMO816R Mark Present のか 10/03/1984 Bayany / Science 10/12/2019	(b) LIC.	



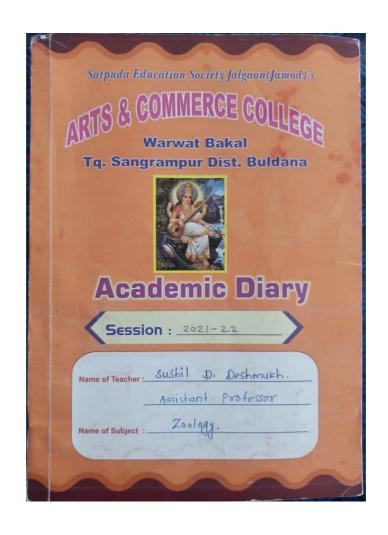
PERSONAL IN	
Name: Lr Megha Ranjit	
Address Adarsh Magar, Khan	ngaon Road, Shequon
Office Arts and Commerce Col	lege, Warwat Bakal
Residence	~
Phone No. (office)	(Res.) 9921559287
Academic Qualification	
Designation Assistant Professor	
Blood Group B+ NE	
Vehicle No.	
Bank Account Bank Name	A/c No.
No Bonk of Maharashstra.	
G.P.F. Account No.	
Income Tax (a) PAN B.FT.P.K.9223.C	(b) L.I.C
dentification Mark	
Date of Birth 30/03/1982	
Subject/Faculty Zoology (Science)	
Date of joining 09-12-2019	
Date of Increment	
Date of senior Scale	
Date of Selection Grade	
Other Information	



	PERSONAL INFROMATION
terne DT Madi	busi Sudhakar Hingankar
Address Naya P	ress, Vidya Colony, NKO+ Dist - Akala
Office A715, 4.00	omerce College warwat Bakal
Residence	
Phone No. (office)	(Res.)
	MSE BEd. PhD.
The second secon	stant Professor
Blood Group	ve
Vehicle NoM.H. 27	AU 7431
Bank Account	Bank Name A/c No.
	25 Bankof Mahreashtra.
G.P.F. Account No.	
G.P.F. Account No	WZPT4157G (6)LIC
G.P.F. Account No	WZPT4157G (B)LIC OUND MOEKS ON LEFT leg Ankle
G.P.F. Account No	WZPT4157G BLIC Ound Maths on left leg Ankle November 1983
G.P.F. Account No	WZPT4157G BLIC Ound Maths on left leg Ankle November 1983
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G.P.F. Account No. Income Tax (a) PANA' Identification Mark	WZPT4157G (B)LIC Ound Maths on left leg Ankle November 1983
G.P.F. Account No	WZPT4157G (B)LIC Ound Maths on left leg Ankle November 1983
G.P.F. Account No	WZPT4157G (B)LIC Ound Maths on left leg Ankle November 1983
G.P.F. Account No. Income Tax (a) PANA Identification Mark	WZPT4157G (B)LIC Ound Maths on left leg Ankle November 1983
G.P.F. Account No. Income Tax (a) PANA Identification Mark	WZPT4157G (B)LIC Ound Maths on left leg Ankle November 1983
G.P.F. Account No. Income Tax (a) PANA Identification Mark	WZPT4157G (B)LIC Ound Maths on left leg Ankle November 1983



	Sonali Anil Tayade 4 commerce college, warwat Bakal
	ommerce college, Harwal Rakal, Tq. sangrampur Dil Bu
Residence Adams	h Nagar, thangain Road, Shegaon
	7266-237\26 (Res.)
	on MSC., NET-JRF, MH-SET, GATE
Designation	Assistant Professor
Blood Group	O+Ve
Vehicle No	
Bank Account	Bank Name A/c No.
No	Bank of Mahanashlad 60364431312
	BYYPT 7543P (b) LIC
	cut mark on chin
	15/02/136/21
	Zoology
	06/03/2020
	January
Date of senior Scale	
Date of Selection Gr	ade
Other Information	



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	hil Diliprao De		
	s Commerce colleg		
	commerce college is		
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	T		5
	ation MISC 6MH- SET		
	ssistant Professor.		
lood Group	'A S [†]		
lehicle No			
ank Account	Bank Name	A/c No.	
lo			
P.F. Account No	k		
ncome Tax (a) PA	N CUEPD 8590 G	(b) LI.C	
dentification Mark	·		
	24/11/1990		
	Z00109y.		
ate of joining	6/03/2020		
Date of Increment	January.		
Tate of senior Sca	ale		
late of Selection	Grade		
Other Information			

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde In-charge Principal

Phone: 07266-237126

visit us at: www.acscwb.co.in

Shri. Krushnarao Ingle (Ex MLA) President

Email: 327accwb@gmail.com

Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

1.1.1 The institution ensures effective curriculum delivery through a wellplanned and documented process

Use of ICT Tool in Curriculum Delivery Session-2021-2022

Supporting Documents- H

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde Incharge Principal

Phone : 07266-237126 visit us at : <u>www.acscwb.co.in</u>

Shri. Krushnarao Ingle (Ex MLA)
President

Email: 327accwb@gmail.com

CERTIFICATE

This is to certify that the documents attached as supporting documents for Criterion I: Curricular Aspects are verified from the college record and found to be correct to the best of my knowledge.

Principal
Arts & Commerce College,
Warvat Bakal Dist.Buldana

ARTS & COMMERCE COLLEGE, WARVAT BAKAL

The following are the Google Classroom and You Tube Channel Links created by the teachers of our college for the effective implementation of curriculum.

Sr.	college for the effective implementation of curriculum.					
No.	Subject	Class	Google Classroom Link			
	Political	B.A1	https://classroom.google.com/c/NDA2MzExMTY3MDk3?cjc=wbvzlcx			
1.	Science	B.A2	https://classroom.google.com/c/NDM4NTM4MjU5MzI3?cjc=zztjrcn			
	Belefice	B.A3	https://classroom.google.com/c/NDM4NTM3ODE3NzMw?cjc=pguhx47			
2		B.A1	https://classroom.google.com/c/MTE3OTk1NTEwNDA2?cjc=qe4rygm			
2.	Economics	B.A2	https://classroom.google.com/c/MTE4MDAwNDIxNjk2?cjc=q3iaydh			
		B.A3	https://classroom.google.com/c/MTE4MDAxNTU4MzA3?cjc=6xsbcvj			
		B.A1	https://classroom.google.com/c/MTI5NDI5MzA4MDA5?cjc=qbivnmu			
3.	History	B.A2	https://classroom.google.com/c/MTM3ODQzNjE3NDYy?cjc=dbkxcdd			
		B.A3	https://classroom.google.com/c/MTI5NDMxNzEzOTU3?cjc=7y65q4t			
		B.A1	https://classroom.google.com/c/MTU5MTkxNzU0OTM0?cjc=5obtok4			
		B.A2	https://classroom.google.com/c/MTA4ODkzODAyODc5?cjc=e23xsll			
		B.A3	https://classroom.google.com/c/NDg2MDA4MzY1Njha?cjc=cnyvxg2			
		B.Com1	https://classroom.google.com/c/MTA4ODI2OTc5OTE1?cjc=76xgiam			
4.	English	B.Com2	https://classroom.google.com/c/MTM3Njg4OTk1MDA4?cjc=vxt4t4d			
		B.Com3	https://classroom.google.com/c/MTM1Mjg3NjA2MTA2?cjc=q5frrkq			
		B.Sc1	https://classroom.google.com/c/MzM4MzgxMjk3MTc5?cjc=ddt54lh			
		B. Voc NMT I	https://classroom.google.com/c/MzQ4MDE4ODc4OTEz?cjc=jqr3iyp			
		B. Voc GHT I	https://classroom.google.com/c/MzQ4MDIwNDc4MjM2?cjc=62scjgn			
		B.Com1	https://classroom.google.com/c/MTY4MjQzMDkyNjkw?cjc=ptegtnc			
5.	Commerce	B.Com2	https://classroom.google.com/c/MTE1NjkwOTMxNTk2?cjc=y7uaake			
		B.Com3	https://classroom.google.com/c/OTIxNjA0MDE3MTRa?cjc=phvasnl			
		B.Sc1	https://classroom.google.com/c/Mjg1NjI1NDc0MTE3?cjc=qlx2ogn			
6.	Chemistry	B.Sc2	https://classroom.google.com/c/NDgyMzM0NTE0NTc1?cjc=j3ciu3f			
		B.Sc3	https://classroom.google.com/c/NDgyMzMyMjM0MDE3?cjc=in4ukwa			
		B.Sc1	https://classroom.google.com/c/MTE3MzUwNTc0NDgy?cjc=wcz26gg			
7.	Botany	B.Sc2	https://classroom.google.com/c/MTE4MTYyMzgzNjQ5?cjc=ke6qdrn			
		B.Sc3	https://classroom.google.com/c/MTE5MDE5MjIyNDUw?cjc=klo6a54			
		B.Sc1	https://classroom.google.com/c/MTE3MzUwODc0OTEw?cjc=4dwtoxm			
8.	Zoology	B.Sc2	https://classroom.google.com/c/MTE3MzUzNDY1NDA5?cjc=7hutgul			
		B.Sc3	https://classroom.google.com/c/MTE3MzQ5MjI0MTE5?cjc=6p33s7h			
Sr. No.	Name of Teacher		You Tube Channel Link			
1.	Mr. Nityanar	nd Dahake	https://youtube.com/channel/UC2H010yB9SajTi51B8AiJxA			
2.		i Hingankar	https://youtube.com/channel/UCFDojxVn_J0xD5IWvC6ELbA			
3.	Dr. Satish		https://youtube.com/channel/UCX3LCKHhvZiB06Z2yMHpTBw			
4.						
5.	Dr. Megha Solanke		https://youtu.be/YgQ1ozyDcBk			
6.	Mr. Santosh Mhasal		https://youtube.com/channel/UCxhmbzWqs5hmAQUxPNsfe9w			
7.	Mr. Nishigandh Satav		https://www.youtube.com/channel/UCmBUAr9IhALRgnh8tdgM6xw			
8.	Mr. Suresh Bhaltadak		https://youtube.com/channel/UChUUbNL73xuR Bnur-1hZWA			
9.	Mr. Kiran Sabale		https://youtube.com/channel/UCm_o3CkTSIqHbtnwb6l-ZXw			
10.	Mr. Sushil Deshmukh		https://youtube.com/channel/UCpnmXFFN8jCgyNwomIYRuBA			
11.	Dr. Rajendra Korde		https://youtube.com/channel/UCGRZWGTuJAx5zuPOn3yTDBg			
12.		Tayade	https://youtube.com/channel/UCrz5TvaBk69DBwjpzyQH5rQ			
13.	Mr. Nagesh	ingre	https://youtube.com/channel/UCHZIlfwZiC7zu1cj6rsQdoQ			



ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

Dr. Rajendra S Korde In- Charge Principal Shri. Krushnarao Ingle (Ex MLA)
President

Email: 327accwb@gmail.com

Phone: 07266-237126

visit us at: www.acscwb.co.in

Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

1.1.1 The institution ensures effective curriculum delivery through a wellplanned and documented process

List of Courses offered across all programs
Session-2021-2022

Supporting Document - I

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

visit us at: www.acscwb.co.in

Dr. Rajendra S Korde In- Charge Principal

Phone: 07266-237126

Shri. Krushnarao Ingle (Ex MLA)
President

Email: 327accwb@gmail.com

CERTIFICATE

This is to certify that the documents attached as supporting documents for Criterion I: Curricular Aspects are verified from the college record and found to be correct to the best of my knowledge.

Principal
Arts & Commerce College,
Warvat Bakal Dist. Buldana

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

COURSES OFFERED

COURSES OFFERED						
Program code	Program Name	Course code	Course Name	Year of introduction		
		1011	Marathi Compulsory	2017		
		1052	Marathi Literature	2017		
B.A. I	Bachelor of	1001	English Compulsory	2017		
Semester I	Arts	1022	Economics	2017		
		1021	History	2017		
		1025	Political Science	2017		
	Bachelor of Arts	1011	MarathiCompulsory	2017		
B.A. I		1052	Marathi Literature	2017		
Semester		1001	EnglishCompulsory	2017		
II		1022	Economics	2017		
11	_	1021	History	2017		
		1025	Political Science	2017		
	_	1011	MarathiCompulsory	2018		
B.A. I	_	1052	Marathi Literature	2018		
Semester	Bachelor of	1001	EnglishCompulsory	2018		
III	Arts	1022	Economics	2018		
111	_	1021	History	2018		
		1025	Political Science	2018		
		1011	MarathiCompulsory	2018		
		1052	Marathi Literature	2018		
B.A. I	Bachelor of	1001	EnglishCompulsory	2018		
Semester	Arts	1022	Economics	2018		
IV	Arts	1021	History	2018		
		1025	Political Science	2018		
		EVS	Environmental Studies	2018		
		1011	MarathiCompulsory	2019		
D A I		1052	Marathi Literature	2019		
B.A. I	Bachelor of	1001	EnglishCompulsory	2019		
Semester V	Arts	1022	Economics	2019		
V		1021	History	2019		
		1025	Political Science	2019		
	Bachelor of Arts	1011	MarathiCompulsory	2019		
D A I		1052	Marathi Literature	2019		
B.A. I		1001	EnglishCompulsory	2019		
Semester		1022	Economics	2019		
VI		1021	History	2019		
		1025	Political Science	2019		
		1001	English Compulsory	2017		
		1011	Marathi Compulsory	2017		
B.Com	Bachelor of Commerce	3014	Computer Fundamental Operating System-I	2017		
Semester I		3011	Principles of Economics	2017		
		3012	Advanced Accountancy	2017		
		3013	Principles of Business Organization	2017		
		1001	English Compulsory	2017		
B.Com		1011	Marathi Compulsory	2017		
Semester II	Bachelor of Commerce	3021	Computer Fundamental Operating System-II	2017		
11		3021	Business Economics	2017		
		3022	Financial Accountancy	2017		

		3023	Principles of Business Management	2017
B.Com Semester III		1001	English Compulsory	2018
		1011	Marathi Compulsory	2018
		3031	Company Account	2018
	Bachelor of	3032	Business Mathematics	2018
	Commerce	3033	Auditing	2018
		3034	Monetary System	2018
		3035	Information Technology & Business Data Processing-I	2018
		1001	English Compulsory	2018
		1011	Marathi Compulsory	2018
		3041	Corporate Account	2018
B.Com	Bachelor of	3042	Business Statistics	2018
Semester	Commerce	3043	Income Tax	2018
IV		3044	Indian Financial System	2018
		3045	Information Technology &	2018
	-		Business Data Processing-II	
		EVS	Environmental Studies	2018
		1001	English Compulsory	2019
	_	1011	Marathi Compulsory	2019
B.Com	Bachelor of	3051	Cost Accounting	2019
Semester V	Commerce	3052	Business Environment	2019
v	_	3053	Business Regulatory Frame Work	2019
	_	3058	Internet & WWW - I	2019
		3059	e-Commerce- I	2019
		1001	English Compulsory	2019
		1011	Marathi Compulsory	2019
B.Com	Daghalan of	3061	Management Accounting	2019
Semester	Bachelor of Commerce	3062	Economics Of Development	2019
VI		3063	Company Law	2019
		3068	Internet & WWW - II	2019
		3069	e-Commerce- II	2019
		ENG	English Compulsory	2017
		MAR	Marathi Compulsory	2017
D 6		BOT	Botany	2017
B.Sc. Semester I	Bachelor of Science	ZOO	Zoology	2017
Demester 1		CHE	Chemistry	2017
		PHY	Physics	2017
		CPS	Computer Science	2017
	Bachelor of Science	ENG	English Compulsory	2017
		MAR	Marathi Compulsory	2017
B.Sc.		BOT	Botany	2017
Semester		ZOO	Zoology	2017
II		CHE	Chemistry	2017
		PHY	Physics	2017
		CPS	Computer Science	2017
B.Sc.	Bachelor of	BOT	Botany	2018

Semester	Science	ZOO	Zoology	2018
III		CHE	Chemistry	2018
		PHY	Physics	2018
		CPS	Computer Science	2018
		BOT	Botany	2018
	Bachelor of Science	ZOO	Zoology	2018
B.Sc.		CHE	Chemistry	2018
Semester IV		PHY	Physics	2018
- ,		CPS	Computer Science	2018
		EVS	Environmental Studies	2018
		BOT	Botany	2019
B.Sc.		ZOO	Zoology	2019
Semester	Bachelor of Science	CHE	Chemistry	2019
V	Belefice	PHY	Physics	2019
		CPS	Computer Science	2019
		BOT	Botany	2019
B.Sc.		ZOO	Zoology	2019
Semester	Bachelor of Science	CHE	Chemistry	2019
VI	Science	PHY	Physics	2019
		CPS	Computer Science	2019
		1401	Communication Skills - I	2020
B. Voc.	Bachelor of	1402	Applied Computer Skills-I	2020
(NMT)	Vocational	1403	Skill Components	2020
Semester I	Science	1404	Communication Skills-I-Lab.	2020
		1405	Applied Computer Skills-I-Lab.	2020
	Bachelor of	1401	Communication Skills - I	2020
B. Voc.		1402	Applied Computer Skills-I	2020
(NMT) Semester	Vocational	1403	Skill Components	2020
II	Science	1404	Communication Skills-I-Lab.	2020
		1405	Applied Computer Skills-I-Lab.	2020
	Bachelor of	1401	Communication Skills - I	2020
B. Voc.		1402	Applied Computer Skills-I	2020
(GHT)	Vocational	1403	Skill Components	2020
Semester I	Science	1404	Communication Skills-I-Lab.	2020
		1405	Applied Computer Skills-I-Lab.	2020
	Bachelor of	1401	Communication Skills - I	2020
B. Voc.		1402	Applied Computer Skills-I	2020
(GHT) Semester	Vocational	1403	Skill Components	2020
II	Science	1404	Communication Skills-I-Lab.	2020
		1405	Applied Computer Skills-I-Lab.	2020
		Certificate Course in Tally	Tally	2020

