

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

1.3 Curriculum Enrichment

1.3.1 Institution integrates cross-cutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the curriculum

Program wise details of cross-cutting issues in courses

Session-2021-2022

Supporting Document - A

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

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

PROGRAM WISE COURSES OFFERED

B.A.
Marathi Compulsory, Marathi Literature, English Compulsory, Economics, History, Political Science, Environmental Studies
B.Com.
English Compulsory, Marathi Compulsory, Computer Fundamental Operating System, Principles of Economics, Advanced Accountancy, Principles of Business Organization, Business Economics, Financial Accountancy, Principles of Business Management, Company Account, Business Mathematics, Auditing, Monetary System, Information Technology & Business Data Processing, Corporate Account, Business Statistics, Income Tax, Indian Financial System, Environmental Studies, Cost Accounting, Business Environment, Business Regulatory Frame Work, Internet & WWW, e-Commerce, Management Accounting, Economics Of Development, Company Law
B.Sc.
English Compulsory, Marathi Compulsory, Botany, Zoology, Chemistry, Physics, Computer Science, Environmental Studies
B.Voc.
Communication Skills – I, Applied Computer Skills-I, Skill Components
Certificate Course
Tally

ARTS AND COMMERCE COLLEGE


Warvat Bakal Dist- Buldana

DEPARTMENT OF ENGLISH

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.A. SEM I	English Compulsory	1. Education Provides a Solid Foundation - A.P.J Abdul Kalam	Human Values, Professional Ethics
		2. Love Story - Maneka Gandhi	Human Values, Environment & Sustainability
		3. Speech on Indian Independence – Jawaharlal Nehru	Human Values
		4. Film Making - Satyajit Ray	Professional Ethics
		5. In the Bazaar of Hyderabad - Sarojini Naidu	Gender and Human Values
		6. She Walks in Beauty - Lord Byron	Environment
		7. Middle Age - Kamala Das	Gender
B.A. SEM II	English Compulsory	1. Appro JRD - Sudha Murthy	Human Values, Professional Ethics
		2. Packing - Jerome K. Jerome	Human Values
		3. How I became a Public Speaker – G. B. Shaw	Professional Ethics
		4. Values in Life - Rudyard Kipling	Human Values
		5. Money Madness - D.H Lawrence	Human Values
		6. No men are foreign - James Kirkup	Human Values
		7. Another's sorrow - William Blake	Human Values
B.A. SEM III	English Compulsory	1. India's Message to the World – Swami Vivekanand	Human Values
		2. The Pleasures of Ignorance – Robert Lynd	Human Values
		3. The Happy Prince – Oscar Wilde	Human Values
		4. The Three Questions – Leo Tolstoy	Professional Ethics
		5. Sonnet 116 – William Shakespeare	Human Values
		6. Dirge – James Shirley	Human Values
		7. Leisure – W H Davies	Environment Sustainability
		8. A Baby Asleep After Pain – D.H Lawrence	Human Values
B.A. SEM IV	English Compulsory	1. Why Are Beggars Despised – George Orwell	Human Values
		2. On the Conduct of Life (extract) - William Hazlitt	Human Values
		3. The Girl – O Henry	Gender
		4. The Magic Shop – H. G Wells	Professional Ethics
		5. Where the mind is without fear – Rabindranath Tagore	Human Values
		6. A Lament – P.B Shelley	Human Values
		7. Love in Life – Robert Browning	Human Values
		8. Up – Hill : Christina Rossetti	Human Values
B.A. SEM V	English Compulsory	1. The Open Window - Saki	Human Values
		2. The Three Hermits – Leo Tolstoy	Human Values
		3. What is Swaraj? - M K Gandhi	Human Values
		4. A Letter to his Son – Lord Chesterton	Professional Ethics
		5. Bangle Sellers -Sarojini Naidu	Human Values
		6. The Mountain and the Squirrel – Ralph Waldo Emerson	Human Values
B.A. SEM VI	English Compulsory	1. Quality – John Galsworthy	Professional Ethics
		2. Miss Brill – Catherine Mansfield	Gender
		3. My Financial Career -Stephen Leacock	Professional Ethics
		4. Socrates and the Schoolmaster – FL Brayne	Human Values
		5. The Solitary Reaper- William Wordsworth	Environment
		6. Stay Calm -Grenville Kleiser	Human Values

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.COM- I SEM I	English Compulsory	1.The Eyes are not Here	Human Values & Nature
		2.The Romance of a Busy Broker	Human Values, Human Nature
		3.Bores	Human's humour

		4.The Lost Child	Human relations
		5.The World is Too Much With Us	Human Values
		6.Once Upon a Time	Human Values
		7. If	Human Nature & Calmness
B.COM -I SEM II	English Compulsory	1.Each is Great in His Own Place	Human Values,Religious Ethics
		2.The Postmaster	Human Attachment
		3.How I Became a Public Speaker	Professional Ethics
		4.Prospects of Democracy in India	National Values & Principles
		5.Success is Counted Sweetest	Human Values
		6.Laugh and Be Merry	Human Values
		7.The Impossible Dream	Human Values
B.COM -II SEM III	English Compulsory	1.Travel By Train	Human Values
		2.Two Gentlemen of Verona	Human Values
		3. Go! Kiss the World	Human Values
		4.The Struggle for an Education Up From slave	Human Values
		5.Where the Mind is without Fear	Human Values
		6.Stopping by Woods on a Snowy evening	Human Values
		7.Leisure	Environment Sustainability
		8.The Daffodils	Human Values
B.COM - II SEM IV	English Compulsory	1.The Town Week	Human Values
		2.Florence Nightingale	Human Values
		3.The Gift of Magi	Human Values
		4.Three Hermits	Human Values
		5.On His Blindness	Human Values
		6.Solitude	Human Values
		7.Still I Rise	Human Values
		8.Money Madness	Human Values
B.COM - III SEM V	English Compulsory	1.Ratan Tata	Professional Ethics
		2.Steve Jobs	Professional Ethics
		3.Vijay Bhatkar	Professional Ethics
		4.Black Money Black Economy	Professional Ethics
		5.Red Red Rose	Human Values
		6.It is needless to ask the Saint Caste	Human Values
		7.Love's Philosophy	Environment Sustainability
		8.The Garden	Environment Sustainability
B.COM - III SEM VI	English Compulsory	1.Sundar Pichai	Professional Ethics
		2.Mallika Srinivasan	Human Values
		3.Muhammad Yunus	Environment Sustainability
		4.Introduction to the Right to information Act	Human Values
		5.All World's a Stage	Human Values
		6.How do I Love Thee	Human Values
		7.The Duck and The Kangaroo	Environment Sustainability
		8.Ode to Autumn	Environment Sustainability
B.SC-I SEM-I	English Compulsory	1.The Child	Human Values
		2.A Simple Philosophy	Human Values
		3.Values in Life	Human Values
		4.Water: The Elixir of Life	Environment Sustainability
		5.Introduction to the Right to Information Act	Human Values
		6.Say Not the struggle Naught Availeth	Human Values
		7.God's Grandeur	Environment Sustainability
		8.To Autumn	Environment Sustainability
		9.Bangle Seller	Human Values
		10.Stay Calm	Human Values
B.SC-I SEM-II	English Compulsory	1. What is Courage?	Human Values
		2.The Hazards of Food Colouring	Environment Sustainability
		3.The Kabuliwallah	Human Values
		4.The Eyes Are not Here	Human Values
		5.My Lost Dollar	Professional Ethics
		6.A Psalm of Life	Human Values
		7.O Captain! My Captain	Human Values
		8.The Quality of Mercy	Human Values
		9.Father Returning Home	Human Values
		10.The World is Too Much With Us	Environment Sustainability



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

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

DEPARTMENT OF ECONOMICS

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.A. SEM I	Economics (Micro Economics)	1. Introduction to Economics	Human Values, Professional Ethics
		2. Demand and Supply	Human Values,
		3. Cost and Revenue Analysis	Professional Ethics
		4. Market Structure	Professional Ethics
		5. Factors of Production	Professional Ethics
B.A. SEM II	Economics (Economy of Maharashtra)	1. Geographical and Economic features of Maharashtra	Human Values, Professional Ethics
		2. Population of Maharashtra	Gender
		3. Agricultural Economy	Professional Ethics
		4. Industry and infrastructure in Maharashtra	Professional Ethics
		5. Economy of Vidarbha	Human Values
B.A. SEM III	Economics (Macro Economics)	1. Macro Economics	Professional Ethics
		2. Money & Value of Money	Professional Ethics
		3. Inflation & Deflation	Professional Ethics
		4. Output & Employment	Professional Ethics
		5. International Trade	Professional Ethics
B.A. SEM IV	Economics (Banking)	1. Commercial bank	Professional Ethics
		2. Central Bank	Professional Ethics
		3. Cooperative bank	Professional Ethics
		4. IMF & WORLD BANK	Professional Ethics
		5. Recent Service in Banking Sector	Human Values
B.A. SEM V	Economics (Indian Economy)	1. Indian Economy and Planning	Professional Ethics
		2. Agriculture	Professional Ethics
		3. Industry	Professional Ethics
		4. External Sectors and Important areas of concern	Professional Ethics
		5. Environment and Pollution	Human Values, Environment & Sustainability
B.A. SEM VI	Economics (Demography)	1. Introduction of Demography	Gender
		2. Fertility and Mortality	Gender
		3. Migration of Population	Gender
		4. Urbanization of Population	Gender , Human Values
		5. Population and Development	Gender


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


ARTS AND COMMERCE COLLEGES

Warvat Bakal, Dist- Buldana

DEPARTMENT OF HISTORY

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.A. SEM I	History of India Earliest Time to 1205 A.D.	1) Survey of the Sources of Ancient India 2) Harppan Civilization 3) Vedic Age 4) Rise of Religious Movement	Human Values, Religious Ethics, Social Values
		1) Rise of the Territorial State 2) Mouryan and Post Mauryan Period	Human Values, Religious Ethics, Social Values
		1) Gupta Dynasty 2) Vakatak Dynasty	Human Values, Social Values, National Values
		1) Vardhan Empire 2) Major Dynasty of Deccan & South Indian 3) Arab and Turks Invasion	Religious Ethics, National Values ,
		1) Educational in Ancient India 2) Position of the Women in Ancient India 3) Judicial Administration in Ancient India 4) Art and Architecture in Ancient India	Educational Values, Social Values , Justice Values, Cultural Values,
B.A. SEM II	History of India from 1206 to 1526 A.D	1) Qutbuddin Aibak 2) Illutmish 3) Razia 4) Balban	National Ethics,
		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	Human Values, National Values
		1) The Bahamani Kingdom 2) The Vijaynagar Kingdom	National Values, Cultural Values.
		1) Political Structure During Sultanate Period 2) State and Society 3) Social Status of Women	Political Values, Social Ethics ,
		1) Economic and Technological Development 2) Arts and Education 3) Religious Movement	Educational Values, Religious Ethics
		1) Survey of the Sources of Medieval India 2) Establishment and Consolidation of Mughal Empire 3) Mughal Policy	National and Social Values
B.A. SEM III	History of India From 1206 to 1756 A.D.	2) Mughals Relation with India Power 3) Declined of Mughal Empire	National and Social Values
		1) Mughal Economy 2) Mughal Society 3) Religion 4) Cultural Life	Human Values, Religious Values, Cultural Values
		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	Social, Political and Religious Values
		1) Political Administration Under Maratha 2) Military System Under Maratha 3) Judicial Administration Under Maratha 4) Fiscal Administration of Maratha	Human Values
		1) Advent of European Power 2) Tool of Expansion of British Dominion in India 3) Economic Changes	Human Values
		1) Revolt of 1857 2) Socio-religious Movement	Human Values, Social and Political, Religious Values ,
B.A. SEM IV	History of India From 1757 to 1947 A.D.		

		3) Modern Education	National Values
		1) Nationalism 2) India National Congres (Early Phase) 3) India National Congres (Leter Phase)	National Values,
		1) Early Gandhian Programme 2) Non Co-oparation Movement 3) Civil Disobedience Movement 4) Quite India Movement	National Values,
		1) Constitutional Development 2) Revolutionary Movement 3) Subhashchandra Bose and Azad Hind Army 4) India Towards Independence	Human Values, National Values,
B.A. SEM V	History of Modern World From 1780 to 1920 A.D.)	1) French Revolution 2) Emergence of Nepolian Bonaparte 3) Congress of Vienna 1815 A.D.	Human Values, Social Values, Religious Values, Educational Values,
		1) Making of the Nation 2) Foreign policy of Germany Under Bismarck 3) Germany Under Kaiser William II	National values
		1) Triple Entente 2) Russo-Japan War 3) First World War	National Values
		1) The Entry of USA In to First World War 2) Concept of Communism, Capitalism , Socialism 3) The Russian Revolution	Social and National Values
		1) Paris Peace Conference 2) Versailles Treaty And Other 3) The League of Nation Aims, Objective, Structure	National Values
B.A. SEM VI	History of Modern World From 1921 to 1965 A.D.	1)Rise of Fascism in Italy 2)Rise of Nazism in Germany 3)Rise of Stalin in Russia 4)The Great Economic Depression 1929	National Ethics, Professional Ethics
		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	International Values
		1)United Nations Organization 2)The Emergence of the USA as world Power 3)The Emergence of the USSR as World Power	International Ethics
		1)Post War World 2)The Doctrine, The Marshal Plan, Point Four Programme. 3)Military Alliances – NATO, SEATO, CENTO, Warsaw	National Values
		1)The Suez Crisis 2)European Unity and Disunity, European Common Market, Common Wealth of Nation, The Berlin Crisis, Quba Crisis.	National Values,


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

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

DEPARTMENT OF POLITICAL SCIENCE

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.A. SEM I	Political Science	1. Salient Feature of Indian Constitution	Human Values
		2. Directive principles of State Policy	Human Values
		3. Central Government of India	Human Values
		4. Indian Parliament	Human Values
		5. Indian Judiciary	Gender and Human Values
B.A. SEM II	Political Science	1. The Election commission and Electoral Reform	Human Values, Professional Ethics
		2. State Executive	Human Values
		3. State Legislature of Maharashtra	Human Values
		4. Local Self Government of Maharashtra	Human Values
		5. Women Participation Nagpur Pact and Right to Information	Human Values
B.A. SEM III	Political Science	1. Background of United Kingdom	Human Values
		2. Legislature	Human Values
		3. Constitutional Background of America	Human Values
		4. The Senate	Human Values
		5. South Asian Association for Regional Co-operation .(SAARC)	Human Values
B.A. SEM IV	Political Science	1. Constitution of China	Human Values
		2. The Chinese Executive and Political Party System of China	Human Values
		3. United Nation Organization (UNO)	Human Values
		4. Major Parts Of UNO	Human Values
		5. International Court of Justice-Composition and Power	Human Values
B.A. SEM V	Political Science	1. Leadership	Human Values, Professional Ethics
		2. Reservation	Human Values
		3. Nationalism	Human Values
		4. Communalism	Human Values
		5. Terrorism	Human Values
B.A. SEM VI	Political Science	1. Concept of State	Human Values
		2. Concept of Democracy	Human Values
		3. Nationalism	Human Values
		4. Socialism	Human Values
		5. Behaviouralism and Sovereignty	Human Values



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

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

DEPARTMENT OF COMMERCE

CROSS-CUTTING ISSUES			
Program	Course		Reflecting cross-cutting issues
B.COM. SEM I	PEC	Fowling are the common cross cutting issues	Human Values, Professional Ethics
	CFS - I		Professional Ethics
	ADA		Professional Ethics
	PBO		Human Values, Professional Ethics
B.COM. SEM II	BEC	Fowling are the common cross cutting issues	Human Values, Professional Ethics
	CFS -II		Professional Ethics
	FAC		Professional Ethics
	PBM		Human Values, Professional Ethics
B.COM. SEM III	COA	Fowling are the common cross cutting issues	Professional Ethics
	BMA		Professional Ethics
	AUD		Human Values, Professional Ethics
	MOS		Human Values, Professional Ethics
	ITB-I		Professional Ethics
B.COM. SEM IV	COA	Fowling are the common cross cutting issues	Professional Ethics
	BST		Professional Ethics
	IT		Human Values, Professional Ethics
	IFS		Human Values, Professional Ethics
	ITB-II		Professional Ethics
B.COM. SEM V	CAC	Fowling are the common cross cutting issues	Professional Ethics
	BEN		Human Values, Professional Ethics, Environment & Sustainability
	BRF		Human Values, Professional Ethics
	I&WW-I		Human Values, Professional Ethics
	EOE-I		Human Values, Professional Ethics
B.COM. SEM VI	MAC	Fowling are the common cross cutting issues	Professional Ethics
	EOD		Human Values, Professional Ethics, Environment & Sustainability
	CL		Human Values, Professional Ethics
	I&WW-II		Human Values, Professional Ethics
	EOE-II		Human Values, Professional Ethics



 Head of the Department
 H.O.D.
 Commerce Department
 Arts/Commerce College
 Warvat Bakal Tq.Sangrampur
 Dist.Buldhana

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist.- Buldana

DEPARTMENT OF CHEMISTRY

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.Sc.-I sem-I	Chemistry	Unit- 1 -Periodic Properties and Ionic bonding	Health and hygiene
		Unit-2- S & P block elements	Industrial applications.
		Unit-3 - Electronic displacement and intermediates	
		Unit-4 – Aromatic hydrocarbons	Industrial applications.
		Unit-5- Thermodynamics	
		Unit-6- Gaseous state	
B.Sc.-I sem-II	Chemistry	Unit- 1 – Polarization	
		Unit-2 – P- block elements	
		Unit-3 – Alkyl and aryl halides	
		Unit-4 – Phenol, Ethers and Epoxide	Industrial applications.
		Unit-5 – Physical properties and molecular structure	
		Unit-6 – Chemical Kinetics	
B.Sc.-II sem-III	Chemistry	Unit- 1 – Covalent bonding	
		Unit-2 – Theory of qualitative analysis	
		Unit-3 – Aldehydes and ketones	
		Unit-4 - Stereochemistry	Bio-organic applications.
		Unit-5 – Thermodynamic and equilibrium	
		Unit-6 – Liquid state and electrochemistry	Industrial applications.
B.Sc.-II sem-IV	Chemistry	Unit- 1 – Chemistry of transition series elements	
		Unit-2 – Inner transition elements	
		Unit-3 – Polynuclear hydrocarbons	
		Unit-4 – Aromatic nitrocarbons	
		Unit-5 – Colligative properties	
		Unit-6 – Crystalline state	
B.Sc.-III sem-V	Chemistry	Unit- 1 – Coordination compounds - I	Application in medicinal fields.
		Unit-2 – Coordination compounds - II	Application in medicinal fields.
		Unit-3 – Heterocyclic compounds	Applications in medicinal field.
		Unit-4 – Drugs, dyes and pesticides	Industrial uses and applications in farms.
		Unit-5 - Photochemistry	
		Unit-6 – Molecular spectroscopy	
B.Sc.-III sem-VI	Chemistry	Unit- 1 – Kinetic aspects of metal complexes	Industrial uses.
		Unit-2 – Organometallic chemistry	Applications in bioinorganic chemistry.
		Unit-3 – Electronic spectroscopy	
		Unit-4 – NMR and mass spectroscopy	Structural elucidation of medicinal compounds.
		Unit-5 – Elementary quantum mechanics	
		Unit-6 – Electrochemistry and nuclear chemistry	Environmental hazards.



 प्रा.एन.डी. धनकर
 सहा. प्राध्यापक व विभाग प्रमुख
 कला, वाणिज्य महाविद्यालय,
 वरवट बुकाल

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

DEPARTMENT OF BOTANY

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.Sc. SEM I	Botany	1. Plant Diversity: Diversity of Plant with respect to habitat, form, nutrition and ecological status	Environment & Sustainability
B.Sc. SEM III	Botany	1. Concept of biodiversity, Ex situ and In situ conservation	Environment & Sustainability
		2. Concept and importance of Biodiversity	Environment & Sustainability
B.Sc. SEM V	Botany	1. Importance of water to plant life.	Environment & Sustainability
		2. Concept of environment, concept and scope of ecology	Environment & Sustainability
		3. Ecological factors- climatic, light, temperature and water.	Environment & Sustainability
		4. Atmosphere and its composition	Environment & Sustainability
		5. Ecosystem- Definition, structure and function	Environment & Sustainability
B.Sc. SEM VI	Botany	1. Health care-edible vaccines	Human values
		2. Conservation- Cryopreservation, Genetically modified organism.	Human values


S.S. Mhasal.
Head & Assistant Professor
Department of Botany
Arts, Commerce College, Warvat (Bk.)
Tq: Sangrampur Dist: Buldana 444202

ARTS AND COMMERCE COLLEGE

Warvat Bakal Dist- Buldana

DEPARTMENT OF ZOOLOGY

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.Sc. SEM I	Zoology(Life and diversity in Non Chordata)	The Syllabus prescribed by the university deals with understanding of diversity among the non chordate organisms	Biodiversity among the invertebrates
B.Sc. SEM III	Zoology(Life and diversity in chordate and concept of evolution)	The Syllabus prescribed by the university deals with understanding of diversity among the non chordate organisms	Biodiversity among the vertebrates.
B.Sc. SEM IV	Zoology (Advance genetics and animal ecology)	The Syllabus prescribed by the university is in two parts the first part deals with the advances in genetics and other part is deals with animal ecology.	Environment and ecological balance
B.Sc. SEM V	Zoology (Animal physiology and economic Zoology)	Unit Vt ^h and VIt ^h of the syllabus deals with the animal conservation environmental sustainability	Biodiversity conservation


Dr.M.R.Solanke.
Assistant Professor &
Head of Zoology Department
Arts, Commerce College, Warwat (Bk.)
Tq: Bagwanpur Dist: Buldana 444202

ARTS AND COMMERCE COLLEGE
Warvat Bakal Dist- Buldana
DEPARTMENT OF MARATHI

CROSS-CUTTING ISSUES			
Program	Course	Course Content	Reflecting cross-cutting issues
B.A. SEM I	Marathi Compulsory	विभाग अ) -वैचारिक)	
		1) जीवन आणि शिक्षण - विनोबा भावे	Human Values
		2) ध्येयांची पराकाष्ठा - साने गुरुजी	Human Values
		3 - ! चालाल तर वाचाल (अभय बंग	Professional Ethics
		ललित विभाग ललित) ब -	
		1) आंगण - मधुकर केचे	Traditional Values
		2) अन्वरशा फकीर	Ethical Values
		3) इर्जिक - अरुण जाखडे	Human Values
		विभाग(कविता) क -	
		1)संतवाणी	
		अ) संत ज्ञानेश्वर	Ethical Values
		ब संत सावता	Ethical Values
		2) स्फूर्ती - केशवसुत	Human Values
		3) या झोपडीत माझ्या - राष्ट्रसंत तुकडोजी महाराज	Human Values
		४) आत्ता - नामदेव ढसाळ	Human Values
		५) शेतकरी राजा - शंकर बढे	Human Values
		६) भंगार - अजीम नवाज राही	Human Values
		विभाग ड) व्यवहारिक मराठी	
		लेखन विषयक नियम (संदर्भग्रंथ : उपयोजित मराठीमधील प्रकरण १५ वे	Professional Ethics
		मुद्रितशोधन : (संदर्भग्रंथ : उपयोजित मराठीमधील प्रकरण १६ वे	Professional Ethics
B.A. SEM I	MLT	अ) कादंबरी तहान	Human Values
		ब संपादित) अर्वाचीन मराठी कविता : कविता (
		(1)केशवसुत तुतारी (अ : बनवा शिपाई (क? आम्ही कोण (	Social Values
		(2)बा भंगू दे काठीप्य माझे (अ :मर्दकर .सी . ब गणपत वाणी (कट्या गंगेमध्ये (	Human Values
		(3)बाजीवन त्यांना कळले हो (अ :बोरकर.भ . बमज लोभस हा इहलोक हवा (क जिने गंगोघाचे पाणी (	Human Values
		(4)कुसुमाग्रज अहिनकुल (अ : बहिमला (कआगगाडी आणि जमीन (	Human Values
		(5)इंदिरा संत : अ मृण्मयी (बहाकेवर आहे गाव (क झुंजावत (	Human Values
		(6)नारायण सुर्वे : अचार शब्द (बदोन दिवस (ककठीण होत आहे (	Social Values
		(7)वी: करंदीकर .दा. अमाझ्या मना बन दगड (बती जनता अमर आहे (कसब घोडे बारा टक्के (	Ethical Values

B.A. SEM III	MLT	निवडक मराठी कथासंपादित -	
		कथाकार कथा	Human Values
		द मिरासदार .मा. -माझ्या बापाची पेंड	Human Values
		शंकर पाटील देशी उपाय -	Human Values
		व्यंकटेश माडगुलकर रामा मैलकुली -	Human Values
		उद्व शेलके माय -	Human Values
		वामन होवाळ मजल्याच घर -	Human Values
		गंगाधर गाडगीळ किडलेले मानसे -	Human Values
		जयंत नारळीकर ट्रॉय चा घोडा -	Human Values
		कमल देसाई माणसाची गोष्ट -	Human Values
		वा चोरघडे .कृ . संस्कार -	Human Values
		राजन गवस हंडका -	Human Values
		संत तुकारामांचे निवडक अभंग संपादित	
		संत तुकारामांचे निवडक अभंग संपादित	
B.A.III SEM V	Marathi Compulsory	विभाग अ) -वैचारिक	
		शेतकऱ्याचा असूड फुले .म -	Human Values
		मंत्रबळ नव्हे यत्रबळ सावरकर .दा .वी -	Ethical Values
		बुद्धी दादा धर्माधिकारी -माणसाची खरी शक्ती :	Social Values
		ललित विभाग ललित) ब -	
		लोकजीवनातील वृक्षपूजा ता भोसले .द -	Environment Values
		पाणी भास्कर चंदनशिव -	Environment Values
		दहा पैशाचा तमाशा मुकुंद टाकसाळे -	Human Values
		विभाग(कविता) क -	
		संतवाणी (अ:तुकाराम बरामदास (	Ethical Values
		औदुंबर बालकवी -	Environmental Values
		गाव ग्रेस -	Ethical Values
		जीवनाचा शोध घेताना वाहरू सोनवणे -	Social Values
		खूनच पुसली मानवतेची सुखदेव -ढानके	Human Values
		दातासाठी हत्तीला मारण्याचे गणित लोकनाथ यशवंत -	Environmental Values
		विभाग ड) व्यवहारिक मराठी	
		अहवाल लेखन (संदर्भग्रंथ : उपयोजित मराठीमधील प्रकरण १२ वे	Professional Ethics
प्रसार मध्यमासाठी लेखन वृत्तलेखन : (संदर्भग्रंथ : उपयोजित मराठीमधील प्रकरण १७ वे मधील बातमी लिहावी कशी हा घटक	Professional Ethics		
B.A. III SEM V	MLT	अमिरासदार.मा.द -लेखक -मिरासदारी (
		(1 नव्यानवबादची एक सफर	Human Values
		(2भुताचा जन्म	Human Values
		(3धडपनारी मुले	Human Values
		(4व्यंकुची शिकवणी	Human Values
		(5शिवाजीचे हस्ताक्षर	Human Values
		(6कोणे एके काळी	Human Values
		(7नदीकाठचा प्रकार	Human Values
		(8शाळेतील समारंभ	Human Values
		९माझी पहिली चोरी (	Human Values
		१०विरंगुळा (	Human Values
		११ (निरोप	Human Values
		१२माझ्या बापाची पेंड (	Human Values
		१३गवत (	Human Values
		१४साक्षीदार (	Human Values
		१५झोप (	Human Values
		१६आजारी पडण्याचा प्रयोग (	Human Values
१७ पाऊस (	Human Values		

		१८ झोडिंग मास्तरांचा तास (	Human Values	
		१९ (स्पर्श	Human Values		
		२० पंचनामा (	Human Values	
		२ (१ बाबू शेलाराचे धाडस	Human Values		
		२ (२ चोरी एक प्रकार :	Human Values		
B.A. SEM II	Marathi Compulsory	विभाग अ) वैचारिक			
		(१ तरुणांनो निर्भय ! बणा शूर बना , स्वामी विवेकानंद -	Ethical Values		
		२) वैज्ञानिक दृष्टीकोन- नरेंद्र दाभोळकर	Ethical Values		
		३) स्त्री शूद्रांचा राजा छत्रपती शिवराय - चंद्रशेखर शिखरे	Human Values		
		विभाग बललित (
		१) हत्तीचा दृष्टांत - केशिराज बास	Human Values		
		२) अल्पभूधारक - बाबाराव मुसळे	Human Values		
		३) वसंत वेणा - मीनल येवले	Natural Values		
		विभाग ककविता (
		(१ संतवाणी -अ) नामदेव बजनाबाई (	Ethical Values	
		२) तयास मानव म्हणावे का? - सावित्रीबाई फुले	Ethical Values		
		३) चाफा - बी	Natural Values		
		४) गेले तुटून पंख - शिवा राऊत	Human Values		
		५) योद्धा - मलिका अमर शेख	Human Values		
		६) माय - स. ग. पाचपोळ	Human Values		
		विभाग ड) व्यवहारिक मराठी			
		१) कार्यालयीन पत्र व्यवहार - संदर्भ ग्रंथ: उपयोजित मराठी मधील प्रकरण रे ३	Professional Ethics		
		२) स्वपरिचय पत्र नोकरीसाठी अर्ज लेखन- संदर्भ ग्रंथ: उपयोजित मराठी मधील प्रकरण ४ थे .	Professional Ethics		
		B.A. SEM II	MLT	नाटक: आई रिटायर होतेय - अशोक पाटोळे	Human Values,
				अर्वाचीन मराठी कविता (संपादित)	Human Values
अर्वाचीन मराठी कविता (संपादित) :-					
कवी/कवयित्री कविता					
८) सुरेश भट - अ) उषःकाल होता होता ब) एवढे दे पांडुरंगा क) साय	Human Values				
९) दिलीप चित्रे - अ) शतके ब) देवा हयाही देशात पाऊस पाड क) हरवले जेथे ज्ञानदेव तुकाराम	Human Values				
१०) यशवंत मनोहर - अ) मी येतो तेव्हा ब) तडफड क) मोडलो मी नाही	Human Values				
११) ना. धो महानोर - अ) या नभाने या भुईला ब) मीच माझा एककल्ली क) मोडलेल्या माणसाचे दुःख ओले झेलताना	Human Values				
१२) विठ्ठल वाघ - अ) मेंढरं ब) साहेबराव पाटील क) माणूस	Human Values				
१३) प्रभू राजगडकर - अ) मल्टी अटीट्युड टॉवर्डस् आदिवासी ब) गोंगलु क) निकाल	Human Values				
१४) कल्पना दुधाळ - अ) चूल ब) बाय व गाय क) मायेच्या पदराखालून	Human Values				
B.A. SEM IV	MLT			अआत्मकथन (- आठवणीचे पक्षी लेखक प्र. ई. सोनकांबळे बलीळाचरित्रातील निवडक कथा (- संपादक- राजेंद्र राऊत	Human Values Ethical Values
B.A. SEM	Marathi			विभाग अवैचारिक (

VI	Compulsory	1) डॉ. पंजाबराव देशमुख . - डॉ. वी. भी. कोलते	Social Ethics		
		2) राजर्षी शाहू: वसा आणि वारसा - गोविंद पानसरे	Social Ethics		
		3) स्वराज्य सकल्पिका राष्ट्रमाता जिजाऊ - अशोक राणा	Social Ethics		
		विभाग ब) ललित			
		1) मरणाहून आपेश वोखटे - भाऊसाहेबांची बखर	Ethical Values		
		2) अरणी - मारुती चितमपल्ली	Natural Values		
		3) ढग सखा कलाल	Human Values		
		विभाग ककविता (
		1) पोरसवदा होतीस - बा.सी. मढेकर	Gender and Human Values		
		2) विझता विझता स्वतःला - नारायण सुर्वे	Human Values		
		3) बैलाचा मृत्यू - वसंत आ. डहाके	Natural Values		
		4) काय कराल? - ना. कु. कवठेकर	Human Values		
		5) शेतकरी - बबन सराडकर	Human Values		
		विभाग ड) व्यवहारिक मराठी			
		1) जाहिरात निवेदन - संदर्भ ग्रंथ : उपयोजित मराठी मधील प्रकरण 6 वे	Professional Ethics		
		2) जाहिरात लेखन - संदर्भ ग्रंथ: उपयोजित मराठी मधील प्रकरण 8 वे	Professional Ethics		
		B.A. SEM VI	MLT	1) एक होता कार्बॅर - अनुवाद - वीना गवाणकर	Gender and Human Values
				2) भाषा विज्ञान परिचय - संपादक- डॉ. मालशे, डॉ. पुंडे , डॉ. अंजली सोमण	


 Head Dept of Marathi
 Arts & Commerce College
 Warvat Bakal

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

1.3 Curriculum Enrichment

1.3.1 Institution integrates cross-cutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the curriculum

Curriculum / Syllabus of Affiliating University Session-2021-2022

Supporting Document - B

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

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

Cross Cutting Issus (Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum)

Sr. No	Course Name	Reflected Issue
1	B.A, B.com, B.sc (<u>Environmental Studies</u>)	Environment and Sustainability
2	B.Com Company Law	Professional Ethics
3	Botany	Environment and Sustainability
4	Zoology	Environment and Sustainability
5	Economics	Environment and Sustainability
6	Chemistry	Environment and Sustainability
7	History	Gender, Human Values,
8	Political Science	Gender, Human Values,
9	English	Human Values
10	Marathi	Human Values

The cross-cutting issues - Professional Ethics, Gender, Human Values, Environment and Sustainability reflected in the Curriculum.

Environmental Studies

13

%SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI ORDINANCE NO. 42 OF 2005

Examination in Environmental Studies leading to Bachelor Degree, Ordinance, 2005

Whereas it is expedient to frame an Ordinance relating to Examination in Environmental Studies leading to Bachelor Degree level, hereinafter appearing, the Management Council is hereby pleased to make the following Ordinance.

1. This Ordinance may be called "Examination in Environmental Studies leading to Bachelor Degree, Ordinance, 2005."
2. This Ordinance shall come into force from the Academic session 2005-06.
3. In this Ordinance and in other ordinances relating to the examination, unless there is anything repugnant in the subject or context :-
 - (i) "Academic session" means a session commencing on such date and ending with such date of the year following as may be appointed by the Management Council.
 - (ii) "Admission to an examination" means the issuance of an admission card to a candidate in token of his having complied with all the conditions laid down in the relevant ordinance, by a competent officer of the University.
 - (iii) "Applicant" means a person who has submitted an application to the University in the form prescribed for admission to an examination.
 - (iv) "Candidate" means a person who has been admitted to an examination by the University.
 - (v) "Regular Candidate" means an applicant who has applied for admission to a University examination through an affiliated college, Department or Institute in which he/she has prosecuting a regular course of study.
 - (vi) "Examinee" means a person who present himself/herself for an examination to which he/she has been admitted.
 - (vii) "Examination" means an examination prescribed by the University under the relevant Ordinance

14

- (x) An "Ex-student" is a person who having once been admitted to an examination of this University, is again required to take the same examination by reason of his failure or absence thereat and shall include a student who may have joined a college, Department or Institute again in the same class.
 - (xi) "Bachelor Degree Examination" means an examination leading to Bachelor Degree of the University.
 - (xii) "Previous Year" means a year following by final year of Bachelor Degree.
4. Save as otherwise specifically provided, the conditions prescribed for admission to the examination under this Ordinance shall apply to all persons who wish to take the examination to the Degrees of the University mentioned in para 5 below.
 5. The conditions prescribed for admission to examination under this Ordinance shall apply to following degrees of the University :-
 - 1) Bachelor of Arts
 - 2) Bachelor of Performing Arts
 - 3) Bachelor of Fine Arts
 - 4) Bachelor of Mass Communication
 - 5) Bachelor of Social Work
 - 6) Bachelor of Commerce
 - 7) Bachelor of Business Administration
 - 8) Bachelor of Science
 - 9) Bachelor of Computer Science
 - 10) Bachelor of Computer Applications
 - 11) Bachelor of Pharmacy
 - 12) Bachelor of Science (Home Science)
 - 13) Bachelor of Technology (Cosmetics)
 - 14) Bachelor of Engineering

- 6 i) Environmental Studies shall be a compulsory subject for a previous year examination of the following Bachelor Degrees of the University,
- 1) Bachelor of Arts
 - 2) Bachelor of Performing Arts
 - 3) Bachelor of Fine Arts
 - 4) Bachelor of Mass Communication
 - 5) Bachelor of Social Work
 - 6) Bachelor of Commerce
 - 7) Bachelor of Business Administration
 - 8) Bachelor of Science
 - 9) Bachelor of Computer Science
 - 10) Bachelor of Computer Applications
 - 11) Bachelor of Pharmacy
 - 12) Bachelor of Science (Home Science)
 - 13) Bachelor of Technology (Cosmetics)
 - 14) Bachelor of Engineering (Part Time) (Civil)
- ii) Environmental Studies shall be a compulsory subject for IIIrd & IVth Semester of the following Bachelor Degrees of the University,
- 1) Bachelor of Engineering
 - 2) Bachelor of Textile
 - 3) Bachelor of Technology (Chemical Technology)
 - 4) Bachelor of Technology (Chemical Engineering)
 - 5) Bachelor of Architecture, and
- iii) Environmental Studies shall be a compulsory subject for Vth & VIth Semester of the Degree of Bachelor of Laws (Five Year Course)
- iv) Students admitted to Second Year/Third Year/IVth Semester Vth Semester of various degree examination courses in different faculties n the academic

8. Scope of the subject for annual pattern examination and or semester pattern examination shall be as provided under the syllabus.
9. Common question paper for all courses covered under this Ordinance alongwith answer books shall be supplied by the University to the Colleges, Departments and Institutes for conducting the examination of the subject.
10. Valuation of the answer books relating to this subject shall be done at College/Department/Institution level only. Remuneration for valuation of answer books shall not be paid by the University.
Provided that prescribed evaluation fee for evaluation of each answer Book/s of an external examinee/s appeared from the examination centre shall be paid to each examination centre.
11. It shall be obligatory on the part of the College/Department/Institute to submit candidate wise following information to the University on or before the date as may be prescribed by the University :-

Sr.No.	Grade/Category	Marks secured
1.	"A"	- 60 and above
2.	"B"	- 45 to 59
3.	"C"	- 35 to 44
4.	"D"	- 25 to 34
5.	"Fail"	- 24 and below
6.	"Absent"	

12. For the purposes of teaching, learning and examination, the Committee consisting of three teachers shall be appointed by the Principal/ Head of the Department/Head of the Institution under his/her Chairmanship/ Chairpersonship. While appointing three teachers on the said committee, the Principal shall take care that the teachers to be appointed on the committee, if necessary, shall be from different faculty.

27. ENVIRONMENTAL STUDIES

Total Marks : 100

PART-A

SHORT ANSWER PATTERN

25 Marks

1. The Multidisciplinary nature of environmental studies

- . Definition, scope and importance.
- . Need for public awareness.

(2 lecture hours)

2. Social Issues and the Environment

- . From Unsustainable to Sustainable development
- . Urban problems related to energy
- . Water conservation, rain water harvesting, watershed management
- . Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- . Environmental ethics : Issues and possible solutions.
- . Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- . Wasteland reclamation.
- . Consumerism and waste products.
- . Environment Protection Act.
- . Air (Prevention and Control of Pollution) Act.
- . Water (Prevention and Control of Pollution) Act.
- . Wildlife Protection Act.
- . Forest Conservation Act.
- . Issues involved in enforcement of environmental legislation.
- . Public awareness.

(7 lecture hours)

3. Human Population and the Environment

- . Population growth, variation among nations.
- . Population explosion - Family Welfare Programme.
- . Environment and human health.
- . Human Rights.
- . Value Education.
- . HIV / AIDS.
- . Women and Child Welfare.
- . Role of Information Technology in Environment and human health.

Case Studies

(6 lecture hours)

PART-B
ESSAY TYPE WITH INBUILT CHOICE **50 Marks**

4. Natural resources :

Renewable and non-renewable resources :

- . Natural resources and associated problems.
 - Forest resources : Use and over exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
 - Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
 - Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
 - Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer - pesticide problems, water logging, salinity, case studies.
 - Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, Case studies.
 - Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
- . Role of an individual in conservation of natural resources.
- . Equitable use of resources for sustainable lifestyles.

(8 lecture hours)

5. Ecosystems

- . Concept of an ecosystem.
- . Structure and function of an ecosystem.
- . Producers, consumers and decomposers.
- . Energy flow in the ecosystem.
- . Ecological succession.
- . Food chains, food webs and ecological pyramids.
- . Introduction, types, characteristic features, structure and function of the following ecosystem :-
 - Forest ecosystem
 - Grassland ecosystem

6. Biodiversity and its conservation

- . Introduction - Definition : genetic, species and ecosystem diversity.
- . Biogeographical classification of India.
- . Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values.
- . Biodiversity at global, National and local levels.
- . India as a mega-diversity nation.
- . Hot-spots of biodiversity.
- . Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
- . Endangered and endemic species of India.
- . Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
(8 lecture hours)

7. Environmental Pollution

- . Definition
 - . Causes, effects and control measures of :-
 - Air pollution
 - Water pollution
 - Soil pollution
 - Marine pollution
 - Noise pollution
 - Thermal pollution
 - Nuclear hazards
- . Solid Waste Management : Causes, effects and control measures of
 - . Role of an individual in prevention of pollution.
 - . Pollution case studies.
 - . Disaster management : floods, earthquake, cyclone and landslides.
(8 lecture hours)

PART-C
ESSAY ON FIELD WORK **25 Marks**

8. Field work

- . Visit to a local area to document environmental assets - river / forest / grass land / hill / mountain
- . Visit to a local polluted site - Urban / Rural / Industrial / Agricultural

Company Law

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE - 2019 - PART TWO - 1

Appendix - Z

**B.Com. III
Semester - VI
COMPANY LAW**

Time : 3 Hours

Marks: 0 Theory

Unit I – Introduction

- 1.1 – Introduction; definition, silent features of company, Act 2013
- 1.2 – Formation of company, stages of formation
- 1.3 - Promoters, Functions of promoter, Duties and liabilities of promoter,
- 1.4 -Types of company,

Unit II – Incorporation of company

- 2.1– Incorporation of company
- 2.2 – Prospectus of company
- 2.3– MOA of company
- 2.4– Article of company

Unit III – Share capital of company

- 3.1 – Share capital of company, Types of share and debenture
 - 3.2 – Issue of shares, Allotment, calls and forfeiture share
 - 3.3 – Transfer & transmission of share
 - 3.4-Share certificate and share warrant
-

UNIT IV - SECURITIES MARKET:

- 1- Brief history of Stock Exchange, Study of functions of BSE and NSE
- 4.2- Stock Exchanges and its importance.
- 4.3 - Primary Market and Secondary Market: Components of Primary Markets
- 4.4 - D-Mat Account: Definition and Procedure.

UNIT – V COMPANY SECRETARY AND COMPANY MEETINGS:

- 5.1 - Appointment, Duties and Responsibilities of Company secretary
- 5.2- Types of company meeting: Annual and General meeting of company, Statutory meeting of Company, – Extraordinary meeting
- 5.3 – Notice of meeting & Agenda of meeting, proceedings of meeting,
- 5.4 - Voting methods of meeting and quorum. Minutes proceeding of meetings, its contents

Reference books:

1. Company Law (volume-I) Rakesh Bhargava: Taxmann 's, New Delhi.
2. Company Act-2013: Ravi Puliani, Mahesh Puliani, Bharat Law House Pvt. LTD., New Delhi.
3. Principles of Company Law: M.C. Shukla, S.S. Gulshan, S Chand Company LTD., New Delhi.
4. A Tax Book of Company Law: P.P. Gogna. Chand & Company, New Delhi.
5. Company Law: Ashok K. Bagrial, Vikas Publishing House Pvt. LTD. Bangalor
6. Indian Company Law: Awatar Singh, Sultan Chand & Sons, New Delhi
7. Guide to Company Law: Procedures, M.C. Bhandari, Wadhwa & Company, Nagpur
8. Company Law: H.K Saharaya, Universal Law Publishing Co., New Delhi
9. कंपनी कायदा: [करण चंद नेरकर, होते, वषाठाकरे आणि सी एस कांबले, साई योत पब्लिकेशन, नागपूर
10. कंपनी [वध: डॉ. आर. एल. नौलखा. नौलखा, रमेश बुक [डपो, जयपुर
11. कंपनी अधिनियम व अंकेण: डॉ. डी.पी. जैन, डॉ. आर.एम.एस. मालक, धनपतराय पब्लिकेशन कंपनी, नईदाला
12. कंपनी साचवाची कायपा [त: ए. एस. उखडकर.

Economics

**B.A. Final
Semester-V
Indian Economy**

(To be Implemented from 2019-2020 Session)

Credit : 04

Marks : 80
Int.Ass. : 20

Unit-I Indian Economy and Planning :

- 1.1 Basic Feature of Indian Economy
- 1.2 Economic Planning : Objectives, Types, Objective of 11th & 12th Five Year Plan.
- 1.3 New Economic Reforms :- Liberalization, Privatization, Globalization

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE - 2019 - PART TWO - 260

Unit-II Agriculture :

- 2.1. Importance of Agriculture in Indian Economy :
- 2.2 Productivity :- Causes of Low Productivity and Remedies to increase productivity
- 2.3 Agricultural Marketing : Difficulties and Remedies of Agricultural Marketing
- 2.4 Subdivision and Fragmentation : Concept, Causes & Remedies.

Unit-III Industrial :

Unit-II Agriculture :

- 2.1. Importance of Agriculture in Indian Economy :
- 2.2 Productivity :- Causes of Low Productivity and Remedies to increase productivity
- 2.3 Agricultural Marketing : Difficulties and Remedies of Agricultural Marketing
- 2.4 Subdivision and Fragmentation : Concept, Causes & Remedies.

Unit-III Industrial :

- 3.1 Industrial Policy – 1991
- 3.2 Small Scale Industry : Importance, Problem, Remedies
- 3.3 Industrial Disputes : Causes, Remedies
- 3.4 Trade Union : Characteristics and Functions

Unit – IV External Sector an Important Areas of Concern :

- 4.1 India's Foreign Trade :- Direction & Composition
- 4.2 Poverty :- Causes, Remedies
- 4.3 Unemployment : Causes, Types, Remedies
- 4.4 Self Help Group

Unit-V Environment and Pollution :

- 5.1 Environment : Meaning and Types
- 5.2 Natural Resources : Land, water, Forest, Causes and Remedies of Air, Water and Land Pollution
- 5.3 Global Warming.

Books Recommended :

- 1) Rudra Datta & K.P.M. Sundaram Indian Economy, S. Chand & company New Delhi
- 2) Five Year Plan, Govt. of India
- 3) Jalan Bimal :- Indian Economic Policy, preparing for the 21st Century, Viking, New Delhi
- 4) डॉ. ग.ना. झामरे : भारतीय अर्थव्यवस्था व विकास व पर्यावरण, अर्थशास्त्र, पिंपळापुरे प्रकाशन, नागपूर
- 5) मिश्र पुरी : भारतीय अर्थव्यवस्था, हिमालय पब्लिकेशन, दिल्ली

**Syllabi for B.A. Final
Semester-V
Modern Concepts and Policy in Politics
(Implemented From 2019-2020 Session)**

Marks : Theory – 80
In.Ass - 20

Unit-I Leadership :

- a) Meaning of Leadership.
- b) Factors of Leadership.
- c) Role of Leadership

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE - 2019 - PART TWO - 273

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE - 2019 - PART TWO - 273

Unit-II Reservation :

- a) Meaning and Nature of Indian – Reservation Policy.
- b) Reservation in Indian Parliament.
- c) Reservation and Politics in India.

Unit-III Nationalism :

- a) Meaning and Nature of Nationalism.
- b) Factors of Nationalism
- c) Present Status of Indian Nationalism.

Unit-IV Communalism :

- a) Meaning of Communalism.
- b) Role of Communalism in Indian Politics.
- c) Present Status of Communalism in India.

Unit-V Terrorism :

- a) Meaning and Definition of Terrorism.
- b) Kinds of Terrorism
- c) The Acts for Prevention of Terrorism in India.

Internal Assessment of Marks (20 Marks)

1) Group Discussion Related to Syllabus	...	10 Marks
2) Paper Presentation OR P.P.T Presentation Related to Syllabus	...	10 Marks

**SYLLABUS
PRESCRIBED FOR
B.A – PART II EXAMINATION
SEMESTER III
COMPULSORY ENGLISH**

TIME : 3 HOURS

MAX MARKS THEORY : 80 MARKS

MAX MARKS INTERNAL ASSESSTMENT : 20 MARKS

Prescribed Textbook : Blossoming Flowers by Board of Editors, Published by Orient Blackswan.

UNIT I

PROSE -

1. India's Message to the World – Swami Vivekanand
2. The Pleasure of Ignorance – Robert Lynd
3. The Happy Prince – Oscar Wilde
4. The Three Questions – Leo Tolstoy

UNIT II

POETRY -

5. Sonnet 116 – William Shakespeare
6. Dirge – James Shirley
7. Leisure – W H Davies
8. A Baby Asleep After Pain – D.H Lawrence

UNIT III

GRAMMAR :

9. Clauses :

- ✓ Main Clause
- ✓ Subordinate Clause (Noun Clause , Adverb Clause , Adjective Clause)

10. Types of Sentences :

- ✓ Assertive/ Affirmative Sentences

- ✓ Exclamatory Sentences
- ✓ Negative Sentences
- ✓ Interrogative Sentences
- ✓ Simple Sentences
- ✓ Compound Sentences
- ✓ Complex Sentences
- ✓ Compound Complex Sentences

UNIT IV

COMMUNICATION SKILLS :

11. Telephone Conversation

- ✓ Answering the Telephone and Asking for Someone
- ✓ Taking and Leaving Messages
- ✓ Making Enquiries on the Phone

12. Interpersonal Conversation

- ✓ Getting People's Attention and Interrupting
- ✓ Making Requests and Responding to Them
- ✓ Asking for Directions and Giving Directions

UNIT V

MULTIPLE CHOICE QUESTIONS

Based on prescribed text Unit I & II only

Internal Assessment :

Viva- Voce

A) Personal Interview

B) Seminar - Presentation (Based on prescribed text : Prose & Poetry)

संत गाडगे बाबा अमरावती विद्यापीठ, अमरावती

बी.ए.भाग-२ मराठी वाङ्मय
सत्र ३ रे

॥ गुण विभागणी ॥

एकूण गुण - १००
लेखी गुण - ८०
अंतर्गत मूल्यमापन - २०
वेळ - ३ तास

अभ्यासक्रमासाठी नेमलेले ग्रंथ -

१) निवडक मराठी कथा - संपादित

२) संत तुकारामांचे निवडक अभंग - संपादक - आ.ह. साळुंखे, लोकायत प्रकाशन, सातारा.

अ) निवडक मराठी कथा	४८ गुण
ब) संत तुकारामांचे निवडक अभंग	३२ गुण

	८० गुण

प्रश्ननिहाय गुण विभागणी

प्रश्न - १ संदर्भासह स्पष्टीकरण - १६ गुण

- निवडक मराठी कथा यावर प्रत्येकी चार गुणांचे दोन संदर्भ विचारले जातील.
- संत तुकारामांचे निवडक अभंग यावर प्रत्येकी चार गुणांचे दोन संदर्भ विचारले जातील.

प्रश्न - २ निवडक मराठी कथा यावर एक दीर्घांतरी प्रश्न विचारला जाईल. - १६ गुण

13. BOTANY

There shall be following paper and practical for B. Sc. Part – I Semester one examination. The syllabus is based on six theory periods and six practical periods per week (Total 75 – 80 theory sessions and 25 practical sessions per complete semester). There shall be one compulsory paper of 3 hours duration, in theory as stated below and practical examination extending for 4 hours. Every examinee shall offer the following paper of 100 marks (out of which 80 marks will be for written examination and 20 marks for internal assessment) and practical examination of 50 marks. Candidates are required to pass separately in theory and practical examination.

1.	Paper – 1	Marks
	a. Theory	- 80
	b. Internal Assessment	- 20
2.	Practical	- 50

Total 150 Marks

1S – BOTANY

Diversity & Applications of Microbes and Cryptogams

UNIT-I : Plant Diversity (15)

- 1.1 Cyanobacteria and its impact on origin of life
- 1.2 Introduction to Plant Kingdom: Cryptogams
- 1.3 Diversity of plants with respect to habitat, form, nutrition and ecological status
- 1.4 General Account of Viruses and structure of TMV and HIV
- 1.5 Bacteria: structure, Nutrition and reproduction
- 1.6 Role of microbes in Agriculture, Medicine and Industries

UNIT-II: Algae (15)

- 2.1. Classification according to F. E. Fritsch and G. M. Smith up to classes
- 2.2. General characters of algae with reference to Habitat, Thallus organization, Pigmentation, Reserve food and Reproduction
- 2.3. General characters of following classes with special reference to examples mentioned –

UNIT-III : Fungi (15)

- 3.1. Classification according to Ainsworth (1973)
- 3.2. General characteristics of following classes with special reference to examples mentioned –
 - 3.2.1. Mastigomycotina : Albugo (Cystopus)
 - 3.2.2. Ascomycotina : Aspergillus
 - 3.2.3. Basidiomycotina : Puccinia graminis-tritici
 - 3.2.4. Deuteromycotina : General characters
- 3.3 Lichen-Types & Economic importance

Unit-IV : Bryophyte (15)

- 4.1. Classification according to G. M. Smith
- 4.2. General characters, thallus organization and life cycle of-
 - 1.2.1. Hepaticopsida – Marchantia
 - 1.2.2. Bryopsida – Funaria
- 4.3. Evolution of sporophyte in bryophytes
- 4.4. Affinities of bryophytes with algae and pteridophytes
- 4.5. Brief Account on some Indian Bryologist.

Unit-V : Pteridophyte (15)

- 5.1. Pteridophytes as First Vascular Plants.
- 5.2. Classification according to G. M. Smith
- 5.3. General characters of the following classes with special reference to examples mentioned –
 - 5.3.1. Sphenopsida – Equisetum
 - 5.3.2. Filicopsida – Marsilea
- 5.4. Stele types in pteridophytes
- 5.5 Heterospory and Seed Habit in Pteridophytes

Unit-VI : Application of Microbes Cryptogams (15)

- 6.1. Economic Importance of Algae with special reference to Food, Industries, Agriculture and Harmful aspects
- 6.2. Mycorrhiza – Types and Application
- 6.3. Role of Fungi in Industries, Medicine, Food & Agriculture
- 6.4. Plant Diseases –
 - 6.4.1. Viral – TMV

7. BOTANY

3S- BOTANY

ANGIOSPERM SYSTEMATICS, ANATOMY & EMBRYOLOGY

UNIT I: Angiosperm Systematics and Biodiversity.

- 1.1 Angiosperms: Origin and Evolution (Pteridospermean and Bennettitalean Theory)
- 1.2 Botanical Nomenclature: Principles of rules, Taxonomic Ranks, Type concept, Valid publication.
- 1.3 Herbarium – Concept & significance, Royal Botanical Garden, Kolkata.
- 1.4 Concept of biodiversity, Ex situ and In situ conservation
- 1.5 Concept & importance of Biodiversity.

UNIT II: Angiosperm Systematics

- 2.1 Systems of Classification: Bentham and Hooker's System, Engler and Prantle's system.
- 2.2 Systematic studies & economic importance of following Families
Dicotyledons (Polypetalae) : Malvaceae, Brassicaceae, Leguminosae, Apiaceae,

UNIT III: Angiosperm Systematics

- 3.1 Systematic studies & economic importance of following Families
Dicotyledons (Gamopetalae): Asteraceae, Asclepiadaceae, Apocynaceae, Solanaceae, Verbenaceae, Lamiaceae.
- 3.2 Dicotyledons (Monoclamydeae): Euphorbiaceae.
- 3.3 Monocotyledons: Liliaceae, Poaceae.

UNIT IV: Anatomy

- 4.1 Types of Tissues:
Meristematic – Types of meristems
Permanent – Simple and complex.
- 4.2 Characteristics of growth rings, Sapwood and heartwood.
- 4.3 Anatomy of root: Primary structure in dicot and monocot

stem, normal secondary growth in dicot stem.

- 5.2 Anomalies in primary structure in *Boerhavia* stem, secondary structure in *Bignonia* and *Dracaena* stem.
- 5.3 Leaf Anatomy: Internal structure in *Nerium* and *Maize* leaf.

UNIT VI : Embryology

- 5.1 Microsporangium, microsporogenesis, development of male gametophyte.
- 5.2 Megasporangium, types of ovules, megasporogenesis, development of female gametophyte (monosporic, Bisporic & tetrasporic).
- 5.3 Double fertilization and triple fusion.
- 5.4 Embryo – Classification of embryo.
- 5.5 Endosperm types & significance, Suspended animation

LABORATORY EXERCISES

- 1) Embryology of Angiosperms:
 - i) Observation of wide range of flowers available in the locality and methods of their pollination.
 - ii) Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .
 - iii) Mounting of T.S. of anthers, Pollen grains and pollinia.
- 2) Anatomy of angiosperms : Preparation of double stained slides of root, stem and leaves of angiosperms mentioned in the syllabus.
- 3) Taxonomy : Description of ten plants belonging to different families in technical language and identification upto family level.
- 4) Long and short excursion is essential

Note : Field tour reports should be supported by exhaustive field notes and photographic representation of plant species studied

Brassicaceae- *Brassica*, **Malvaceae-** *Hibiscus*, *Sida*, *Malvastrum*,
Fabaceae- *Crotalaria*, *Indigifera*, *Tephrosia*, **Caesalpinoidae-**
Caesalpineae, *Cassia*, **Mimosoidae-** *Prosopis*, *Acacia*, **Apiaceae-**
Corindrum,
Apocynaceae- *Vinca*, *Thevetia*, **Asclepiadaceae-**

13. Pande, S.N. (1987) Principles and Applications of Photogeology - Wiley Eastern Limited.
14. Sabisin, F.F. (2000) Remote Sensing Principles and Interpretations. W.H. Freeman and Company, USA.
15. Lilesand, T.M. and Kiefer, R.W. (2000) Remote Sensing and Image Interpretation. John Wiley and Sons Inc., New York.
16. Drury, S.A. (1997) Image Interpretation in Geology. Chapman and Hall, London.
17. Todd, D.K. (1980) Ground Water Hydrology. John Wiley and Sons Inc. New York.
18. Karanth, K.R. (1989) Hydrogeology. Tata McGraw Hill Pub.Co.Ltd., New Delhi.
19. Nagabhushaniah, H.S. (2001) Groundwater in Hydrosphere (Groundwater Hydrology) CBS Publisher, New Delhi.
20. Karanth K.R. Groundwater, Assessment, Development and Management. Tata McGraw Hill Pub. Co. Ltd., New Delhi.
21. Raghunath : Ground Water Hydrology, New Age Publication, Pune

paper has been divided into 6 units. There shall be one question in every unit with internal choice for each of 12 marks & one compulsory question covering all the syllabus of Semester-V (8 marks).

SS - BOTANY

PLANT PHYSIOLOGY AND ECOLOGY

Unit - I: Plant Water Relations

- 1.1 Importance of water to plant life.
Imbibition - Diffusion, Osmosis, Plasmolysis.
- 1.2 Active and passive Absorption of water.
- 1.3 Ascent of sap - Root Pressure and Transpiration Pull Theory.
- 1.4 Transpiration - Types of transpiration, Stomatal movements, Mechanism of transpiration (Starch) sugar hypothesis), Significance, Antitranspirant, Guttation.
- 1.5 Mineral uptake - Active uptake - Career Concept, Passive up take - Ion Exchange.

47

Unit - II: Metabolism-

- 2.1 Photosynthesis - Introduction, Role of Light, Photosynthetic Apparatus and Pigments, Two Pigment Systems, Photophosphorylation, C3 and C4 cycle, CAM Pathway.
- 2.2 Respiration - Introduction, Mitochondria as a Respiratory centre, Types of Respiration - Aerobic and Anaerobic, Mechanism of aerobic respiration- Gly-

colysis, Krebs cycle, Electron transport system and Chemiosmotic ATP generation, Respiratory Quotient.

Unit - III: Metabolism and growth

- 3.1 Nitrogen Metabolism- Sources of nitrogen, Symbiotic nitrogen fixation, Role of Nitrate reductase.
- 3.2 Growth - Phases of growth, Growth curve, Physiological role of growth hormones (Auxins, Gibberellins, Cytokinins, Abscisic acid, and Ethylene).
- 3.3 Physiology of Senescence and Abscission.

Unit - IV: Plant responses

- 4.1 Photoperiodism - Concept of Florigen, Role of Phytochrome,
- 4.2 Vernalization- Concept and Significance.
- 4.3 Plant movement- Tropic (Phototropic and Geotropic) and Nastic (Epinasty, Hyponasty and Seismonasty)
- 4.4 Stress physiology- Concept, Types of stress, Water and Salinity stress.

Unit - V: Ecology and Environment:

- 5.1 Concept of environment, Concept and scope of ecology.
- 5.2 Ecological factors- Climatic- Light, Temperature and Water.
- 5.3 Atmosphere and its composition.
- 5.4 Edaphic factor- Process of soil formation, soil profile, soil biota and their role.
- 5.5 Ecological Adaptations - Morphological and Anatomical adaptation in Hydrophytes, and Xerophytes.

Unit - VI: Ecosystem:

- 6.1 Population Ecology- Natalty and Mortality, Community characteristics - Frequency, Density and Abundance
- 6.2 Ecological Succession - Hydrosere and Xerosere
- 6.3 Ecosystem - Definition, Structure and Function,

48

Food chain, Food web, Energy flow model (Single channel model)

- 6.4 Types of Ecosystem- Pond ecosystem, Desert ecosystem.

LABORATORY EXERCISE :

Plant Physiology: Major experiment (Any Seven)

1. To study the effect of temperature and organic solvent on permeability of plasma membrane.
2. To study osmotic pressure of cell sap by plasmolytic method.
3. To determine water potential of plant tissue.
4. To determine the path of water (ascent of sap)
5. To determine the rate of transpiration by Ganongs photometer.
6. To determine rate of photosynthesis under varying quality of light and CO₂ concentration.
7. To study the rate of photosynthesis in terrestrial plants with the help of Ganongs Photosynthometer.
8. Separation of chloroplast pigments by paper chromatography/ solvent extraction method.
9. Separation of amino acids by paper chromatography method.
10. To determine R.Q. using different substrates.
11. To determine the rate of respiration by Ganongs respirometer.
12. To study antagonism of salts.
13. To study phenomenon of adsorption.
14. To study effect of IAA and Gibberellins on seed germination.
15. Test for secondary metabolites- Alkaloid, Phenolics, Tannin, Flavonoids and Lignin
16. To study Endo and Exo-osmosis by egg membrane osmoscope

Plant Physiology: Minor experiment- (Any Three)

1. To demonstrate fermentation.
2. To demonstrate exo and endosmosis
3. To demonstrate transpiration by Bell jar.
4. To demonstrate light is necessary for photosynthesis
5. To demonstrate anaerobic respiration in germinating seeds.
6. To demonstrate the evolution of CO₂ in respiration.
7. To demonstrate the phenomenon of nastic movement with help of *Mimosa pudica* / or *Biophytum sensitivum*.

Ecology: Major experiment (Any Three)

1. Study of morphological and anatomical adaptations in hydrophytes - *Hydrilla*, *Eichhornia*, *Typha*, *Vallisneria* and *Nymphaea* (any two)

IS-ZOOLOGY

LIFE AND DIVERSITY OF NON-CHORDATA

UNIT-I : 1. Classification of Non-Chordata.

2. Phylum Protozoa: General characters.
3. Type study: Plasmodium vivax: Structure, Life-cycle.
4. Parasitic protozoan and human diseases: Malaria, Amoebiasis, Trypanosomiasis, Leishmaniasis.

UNIT-II: 1. Phylum Porifera: General Characters.

2. Type study: Scypha: Habits and habitat, External features, cell types, spicules & Structure and significances of canal system.
3. Phylum Coelenterata: General Characters,
4. Type study: Metridium: Habits and habitat, External features, Gastro-vascular cavity, Mesenteries, Reproduction.

UNIT-III: 1. Phylum Platyhelminthes: General Characters.

2. Type study: Fasciola hepatica: Habits and habitat, External features, Digestive, Excretory, Reproductive system and Life cycle.
3. Phylum Aschelminthes: General Characters.
4. Type study, Ascaris lumbricoides: Habits and habitat, External features, Digestive, Excretory, Reproductive system and Life cycle.

UNIT-IV: 1. Phylum Annelida: General Characters.

2. Type study: Leech: External features, Digestive, Excretory and Reproductive system.
3. Phylum Arthropoda: General Characters
4. Type study: Cockroach: Habits and habitat, External features, Digestive system, Respiratory system, Reproductive system.

UNIT-V : 1. Phylum Mollusca: General Characters.

2. Type study: Pila globosa: Habits and habitat, External features (Shell and Body), Digestive, Respiratory and Repro-

physiological

4. Larval forms and their significance: Amphiblastula, Planula, Trochophore, Bipinnaria, Brachiolaria,

LIFE AND DIVERSITY OF NON-CHORDATA

Practical : Two practical per week each of 3 period's duration. The Examination shall be of 4 hrs duration and of 50 marks.

I-Life and diversity of non-chordata

1. Observation, Classification up to classes and sketching of the following animals, (Specimens or Models):
 - Phylum Protozoa: *Plasmodium* trophozoite, *Euglena*, *Entamoeba histolytica*.
 - Phylum Porifera: Sycon, Bath sponge, *Euplectella*.
 - Phylum Coelenterata: *Obelia*, *Aurelia*, *Tubipora*.
 - Phylum Helminthes: *Taenia*, *Ascaris* (male & female).
 - Phylum Annelida: Nereis, Earthworm, Leech,
 - Phylum Arthropoda: Prawn, *Limulus*, *Aranea*, *Scolopendra*, *Julus*, Moth, Mosquito.
 - Phylum Mollusca: Chiton, Pila, Dentalium, Unio, Octopus.
 - Phylum Echinodermata: *Antedon*, *Holothuria*, *Echinus*, Sea star, Brittle star
 - Phylum Hemichordata: *Balanoglossus*
2. Study of Permanent slides:

L.S.Sycon, nematocyst, Ascaris egg, T.S. Ascaris through gonads, T.S.Leech through crop, Compound eye of insect, Radula, Gill lamella and Osphradium of *Pila*, Scolex and Gravid Proglottid of *Taenia*.
3. Anatomical Study through Computer Aided Techniques, Video Clipping Models, Photographs and other available resources :
 - a) Leech/Earthworm: Alimentary canal, Reproductive system, Nervous system,
 - b) *Crabapple/Cockroach: digestive system, Nervous system*

5. A Handbook of Seed Inspectors : Central Seed Committee Ministry of Agriculture.
6. Indian Minimum Seed Certification Standards : N.S.Tunwar, S.V.Singh.
7. Principles of Seed Certification and Testing : N.P.Nema.

BSc.II Semester III

10.ZOOLOGY

There shall be the following paper and practical for B.Sc. Part-II Semester III examination. The syllabus is based on 6 theory periods and six practical periods per week (Total 75-80 theory sessions and 25 practical sessions during the complete semester). There shall be one compulsory theory paper of 3 hours duration, as stated below and a practical examination extending for four hours. Every examinee shall offer the following paper of 100 marks (80 for written examination and 20 marks for internal assessment) and a practical examination of 50 marks. Candidates are required to pass separately in theory and practical examination.

Semester III

1) Paper-I:	
Life and diversity of Chordata and concepts of evolution	Marks Allotted
Written examination.....	80
Internal assessment.....	20
2) Practical:	50
Total:	150 Marks

Paper -3 S-Zoology

LIFE AND DIVERSITY OF CHORDATA AND CONCEPT OF EVOLUTION

Unit I : Phylum Chordata;

Affinities of Agnatha:

Series Pisces:

Type study: *Scoliodon sarokawah* (Dogfish) – Habits and habitat, External Characters, Digestive system: alimentary canal and digestive glands, Respiratory system: respiratory organ and mechanism of respiration, circulatory System: Structure and working of Heart, major arteries and veins, Lateral line receptors, Migration in fishes-Types, causes and significance.

Unit II : Class Amphibia:

Type Study – *Rana tigerina*, Habits and habitat, external, characters. Respiratory organs- Circulatory system; Structure of Heart, major arteries and veins, urinogenital system.. Parental care in amphibia.

Class Reptilia:

Type study- *Calotes versicolor*- Habits and habitat, External characters, circulatory system- Structure of Heart, major arteries and veins. Urinogenital system, snake venom and anti-venom,

Unit III : Class Aves:

Type study: Pigeon-*Columba livia* Habits and habitat, External characters, Respiratory system, urinogenital system. Flight adaptations, Migration in birds.

Class Mammalia:

Primitive mammals: salient features of Prototheria and Metatheria, Morphology of mammalian endocrine glands. Aquatic mammals.

Unit IV : Evolution: Meaning and scope,

Indirect Evidences of evolution: Evidences of organic evolution- morphological and anatomical, physiological and biochemical, embryological.

Chemistry

- Electricity and Magnetism Vol. II – Berkley Physics Course
- Electricity and Magnetism – D.N.Vasudeva
- Electricity and Magnetism – Brijlal & Subramaniam
- Electrodynamics – S.L.Gupta & R.Singh
- Electricity & Magnetism – Reitz & Millford
- Electricity & Magnetism – A.S.Mahajan & A.A.Rangawala (TMH)
- Principle of electricity & Magnetism – Panofsky & Philips
- Electricity & Magnetism – S.S.Atwood
- Electromagnetic waves & radiating systems – E.C. Jordan

9. CHEMISTRY

2S Chemistry

Total Lectures: 84

Marks: 80

Note: Figures to the right hand side indicate number of lectures.

Unit I

14L

- A) Polarisation-Definition, polarising power, polarizability, effect of polarization on nature of bond. Fajan's rules of polarisation and its applications. [4]
- B) Covalent bonding-Directional nature of covalent bond. Hybridisation, types of hybridisation to explain geometries of NH_4^+ ion, PCl_5 , SF_6 and IF_7 . [4]
- 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 principle with important applications. [6]

Unit II

14L

- A) P-Block Elements-Comparative study of 16th and 17th group elements with reference to electronic configuration, ionization energy and oxidation states. Oxidising properties of halogens with reference to oxidation potential. Interhalogen compounds, structure and bondings. Introduction to fluorocarbons. [6]
- B) Noble Gases-Inertness of noble gases. Compounds of noble gases- only structure and bonding in XeF_2 , XeF_4 , XeF_6 , XeO_3 and XeO_4 [2]
- C) Nonaqueous Solvents-Requirements of a good solvent. Water as

Unit III

14L

- 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. [4]
- 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. [4]
- C) Alcohols: Dihydric alcohols: Ethylene glycol- Preparation from ethylene, ethylene chloride and ethylene oxide, Reactions- with Na, PCl_5 , CH_3COOH , ZnCl_2 , conc. H_2SO_4 and dehydration with heat. Trihydric alcohols: Glycerol- Preparation from propylene, Reactions- with Na, HCl, PCl_5 , HNO_3 and KHSO_4 . Pinacol- pinacolone rearrangement (mechanism). [6]

Unit IV

14L

- A) Phenols: Methods of formations a) from aniline b) from cumene. Acidic character, Reaction of Phenols- a) Carboxylation (Kolb's reaction), b) Fries Rearrangement, c) Claisen Rearrangement and d) Reimer – Tiemann reaction. [6]
- B) Ethers: Diethyl ether- Preparation by Williamson's synthesis and continuous etherification process, Reactions- with cold and hot HI. [4]
- C) Epoxides: Synthesis of ethylene oxide from ethylene and styrene oxide from styrene. Ring opening reactions of both catalysed by acid and alkali. [4]

Unit V - Physical Properties and Molecular Structure

14L

A) Electrical Properties:

- Polar and non-polar molecules. Dipole moment.
- Induced polarization and orientation polarization. Clausius-Mossotti equation (only qualitative treatment).
- Measurement of dipole moment by temperature and refractivity

3 : CHEMISTRY
Semester-V
5S Chemistry
(Effective from session 2015-16)

The examination in Chemistry of Fifth semester shall comprise of one theory paper, internal assessment and practical examination. Theory paper will be of 3 Hrs. duration and carry 80 marks. The internal assessment will carry 20 marks. The practical examination will be of 6 hours duration and carry 50 marks.

The following syllabi is prescribed on the basis of six lectures per week and 6 practical periods per batch per week. Each theory paper has been divided into 6 units. There shall be one question in every unit with internal choice for each of 12 marks & one compulsory question covering all the syllabus of Semester-V (8 marks).

Unit IV **14L**

A] Dyes: Classification on the basis of structure and mode of application, Preparation and uses of Methyl orange, Crystal violet, Phenolphthalein, Alizarin and Indigo. **[5]**

B] Drugs: Analgesic and antipyretics: Synthesis and uses of phenylbutazone. Sulpha drugs: Synthesis and uses of sulphanimide and sulphadiazine. Antimalarials: Synthesis of chloroquine from 4,7-dichloroquinoline and its uses. **[5]**

C] Pesticides: Insecticides: Synthesis and uses of malathion. Herbicides: Synthesis and uses of 2,4-dichlorophenoxy acetic acid (2,4-D). Fungicides: Synthesis and uses of thiram (tetramethyl thiuram disulphide). **[4]**

Unit V- Photochemistry **14L**

(i) Photochemical and thermal reactions. (ii) Lambert's law - Statement and derivation. Beer's law - Statement and derivation. Reasons for deviation from Beer's law. (iii) Laws of photochemistry. (iv) Quantum yield of photochemical reaction. Reasons for high and low quantum yield. Experimental determination of quantum yield. Photosensitized reaction. (v) Kinetics of photochemical decomposition of HI. (vi) 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. (vii) Chemiluminescence and Bioluminescence with examples. (viii) Numericals. **[14]**

Unit VI- Molecular Spectroscopy **14L**

(i) Electromagnetic radiation, characteristics of electromagnetic radiation in terms of wavelength, wave number, frequency and energy of photon. Spectrum of electromagnetic radiation. (ii) Types of spectra - Emission and absorption spectra, atomic and molecular spectra, line and band spectra (iii) Translational, vibrational, rotational and electronic motion. The degree of freedom in each motion. (iv) Energy level diagram of a molecule indicating electronic, vibrational and rotational transitions. (v) Condition for pure rotational spectrum (i.e. microwave active molecules), selection rule for rotational transition. Derivation of expression

B] Chelates : Definition, classification and applications of chelates in analytical chemistry. Stability of chelate with special reference to chelate effect. **[3]**

Unit II **14L**

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 Δ_o and pairing energy, distribution of electrons in t_{2g} and e_g orbitals in high spin and low spin octahedral complexes. Factor affecting magnitude of crystal field splitting in octahedral complexes. **[8]**

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

rule for vibrational transition. Vibrational energy levels of a simple harmonic oscillator. Zero point energy, position of a spectral line. Determination of force constant of a covalent bond. (v) 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. (vii) Numericals. **[14]**

Semester-V

5S Chemistry Practicals

Total Laboratory sessions: 26 **Marks: 50**

Exercise I: Inorganic Preparations **12 Laboratory sessions**

1. Preparation of tetraamminecopper(II)sulphate.
 2. Preparation of hexaaminenickel(II)chloride.
 3. Preparation of potassiumtrioxalate aluminate(III).
 4. Preparation of Prussian blue.
 5. Preparation of chrome alum.
 6. 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 **14 Laboratory sessions**
(Standard oxalic acid solution should be prepared by the students)

1. To determine strength of given HCl solution conductometrically.
2. To determine strength of given CH_3COOH solution conductometrically.
3. To determine strength of given HCl solution potentiometrically.
4. To determine strength of HCl and CH_3COOH in a given mixture conductometrically.
5. To determine redox potential of $\text{Fe}^{2+}/\text{Fe}^{3+}$ system potentiometrically.
6. To determine molecular weight by Rast's method.
7. To determine specific rotation of optically active compound by Polarimeter.



Principal
Arts & Commerce College,
Warvat Bakal Dist. Buldana