

UNIVERSITY OF MUMBAI



Program: B.A. / B. Sc.

S. Y. B. A. /B. Sc.

Course: Human Sciences

(Credit Based Semester and Grading System
with effect from the academic year 2015–2016)

S. Y. B. Sc. (Human Sciences)

Structure of Semester III

Course Code	Course Title	Lectures	Credit Points
USHSC301	Haematology, Immunology and Epidemiology	45	2
USHSC302	Population studies	45	2
USHSC303	Psychology	45	4
USHSC304	Management and Organization – Structure and Functioning	45	4
USHSC305	Use of ICT, Internet security and Environmental Laws	45	2
USHSC3P1	Based on USHSC301		2
USHSC3P2	Based on USHSC302, Based on USHSC303, Based on USHSC305		2
USHSC3P3	Project Work		2
Total			20

Structure of Semester IV

Course Code	Course Title	Lectures	Credit Points
USHSC401	Anthropology and Archeology	45	2
USHSC402	Sex, Fertility and Psychosocial issues	45	2
USHSC403	Biotechnology	45	2
USHSC404	Economics	45	4
USHSC405	Economics and Psychology	45	4
USHSC4P1	Based on USHSC402 and Based on USHSC403		2
USHSC4P2	Based on USHSC401, Based on USHSC404 and Based on USHSC405		2
USHSC4P3	Project Work		2
Total			20

Semester III Syllabus

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC301	Hematology, Immunology and Epidemiology	45	2
<ul style="list-style-type: none"> It will help Students to learn fundamentals of hematology, immune system, broad public health problems and the National Preventive programmes for same 			

Unit I	<ul style="list-style-type: none"> Composition of Blood Blood groups and Blood banks Introduction to Immunology Autoimmune Diseases –Definition and Reasons, examples- Inflammatory bowel disease, Myasthenia gravis, Psoriasis, Rheumatoid arthritis. 	15
Unit II	<ul style="list-style-type: none"> Introduction to Epidemiology – Definition, Air borne, vector borne, water borne. Communicable diseases: Diagnosis, transmission, prevention, control measures of- dengue, swine flue, leptospirosis, Ebola, Ascariasis, filariasis. 	15
Unit III	<ul style="list-style-type: none"> Vaccines - Rabies, Hepatitis, Influenza. National Preventive programmes - TB control programme, malaria control programme. International agencies and their programmes WHO, Red Cross, UNAIDS, World Bank Funding related to Health. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC302	Population studies	45	2
<ul style="list-style-type: none"> To understand the components and dynamics of population with respect to culture, society, ethics and politics. 			

Unit I	<ul style="list-style-type: none"> Population Dynamics Density, Natality, Mortality, Age Pyramid, Sex Ratio, Fertility rate, Growth Curves, Migration. 	15
Unit II	<ul style="list-style-type: none"> Population Thories. Historical and global population trends - Qualitative and Quantitative Cross culture studies 	15
Unit III	<ul style="list-style-type: none"> Census of Human population: Definition, purpose and Methodology Ethical, social and political issues. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC303	Psychology	45	4
<ul style="list-style-type: none"> To elaborate on aspects of cognition, theories of personality and intelligence 			

Unit I	<p>Theories of Personality</p> <p>An overview of Theories of Personality</p> <ul style="list-style-type: none"> a) Sigmund Freud and Psychoanalysis b) The Behaviorist view of Personality c) The Social Cognitive view of Personality d) Humanism and Personality e) Trait Theories f) The biology of Personality: Behavioral Genetics g) Assessment of Personality h) Applying Psychology – Personality testing on the internet 	15
Unit II	<p>Thinking and Reasoning</p> <ul style="list-style-type: none"> • Definition and nature of thinking • Kinds of thinking • Problem solving • Concept formation and categorization: prototypes, hierarchies of concepts. • Reasoning: deductive, inductive reasoning • Creative thinking 	15
Unit III	<ul style="list-style-type: none"> • Individual differences and Intelligence theories <p>Individual differences, major areas of differences, heredity v/s environment, Intelligence -what is it? Measurement of Intelligence and Intelligence Scales What is IQ, IQ and behavior.</p>	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC304	Management and Organization – Structure, Functioning	45	4
<ul style="list-style-type: none"> To elaborate on aspects of cognition, theories of personality and intelligence 			

Unit I	<ul style="list-style-type: none"> Nature Scope and process of management, historical evolution of management & its foundation. Types of Management Different approaches and systems of management, Types of skills, roles and modern challenges. Management Planning Process, Managerial decision Making Introduction to Organizing, Organizational Structure and Its Dimensions. Different Types of Organizational Design and Their Advantages and Disadvantages. 	15
Unit II	<ul style="list-style-type: none"> Leadership: Elements of leadership in work group The quality of modern leadership Leadership theories and leadership styles The role of power and the role of expectations Leadership functions Characteristics of successful leaders Pressures and problems of leaders Difference between manager and leader 	15
Unit III	<ul style="list-style-type: none"> Relationship between organization objectives and organization hierarchy Auxiliary Staff and line staff. OCB-Organization Citizenship Behaviour. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC305	Use of ICT, Internet security and Environmental Laws	45	2
<ul style="list-style-type: none"> To make the students aware about the environmental and cyber laws and related issues. 			

Unit I	<ul style="list-style-type: none"> Use of ICT in organization: Definition, Meaning and Importance of ICT system, Types of ICT systems, use of ICT for an Organization. Technology - Exploration to Decision making, Implementation, E-commerce and E-business. Digitization: Definition, Process, Analog signals to digital signals, Analog text to digital, implications of digitization. Communication strategies - Digitization, information and communication theories and communication strategies 	15
Unit II	<ul style="list-style-type: none"> Cyber Laws, Investigation and Ethics: Cyber Crime, Information Security and Law, Types & overview of Cyber Crimes, Cyber Law Issues in E-Business Management overview of Indian IT Act, Ethical Issues in Intellectual property rights, Copy Right, Patents, Data privacy and protection, Domain Name, Software piracy, Plagiarism. 	15
Unit III	<ul style="list-style-type: none"> Introduction to Climate Systems: Atmosphere, Hydrosphere, Lithosphere, Cryosphere, Biosphere. Human – Climate Interactions: Impacts of Natural Calamities on human (Eg. Floods, Tsunami, Cyclones and Earthquakes) Impacts of Human activities on Climate (Eg. Acid rains, Ozone depletion, Global Warming, Green house effect, <i>El Nino</i> and <i>La Nina</i>) Introduction to Environmental Laws: Air Act (1981), Water Act (1974), Noise Pollution Act (2000), Environment Protection Act (1986), Forest Act (1927). 	15

Semester III

Practicals

Identification for all practicals should be shown with available models, photographs, Google images, diagrams from books whichever is available

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC3P1	PRACTICAL-I	03 / Week	02
<ol style="list-style-type: none"> 1. Blood group test 2. Hemoglobin test and haemin crystal 3. Microbial staining - Bacterial gram positive and gram negative (curd) 4. Microbes testing --environmental pathogens (air pollution) 5. Blood cell type -- Identification 6. Leukemic cell slide--- Identification 7. ELISA --- Identification 8. Yeast cell --- Identification 9. Virus model/Photo - Identification Polio virus, AIDS Virus, H1N1, Ebola. 10. Epidemiology- Slides/Photos Identification- Leptospirosis, Psoriasis. 11. Parasites Slide/Photos ---- Plasmodium, Enterobius, Ascaris, Wuchereria, Tapeworm 			

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC3P2	PRACTICAL-II	03 / Week	02
<ol style="list-style-type: none"> 1. Population density study by Daphnia / by using colored thermalcol balls. 2. Age Pyramids and Growth Curves –Identification 3. Determination of Natality and Mortality rate. 4. Mock Census—Analysis of available data, 5. Practical nine dot problem (Psychology). 6. Study of Ecological Cycles. --(O2 Cycle, CO2 Cycle, H2O Cycle, and N2 Cycle.)- Identification 7. Bell’s Experiment ---- Demonstration and Identification. 8. Evolution of O2 during photosynthesis-----Demonstration and Identification. 9. pH of water with pH paper and Universal Indicator. 10. pH of Soil with pH paper and Universal Indicator 11. Demonstration of pH with pH meter 12. Study of pollution monitoring and measuring instruments: HVS, Decibelometer, Identification 13. Practicals based on IT <ol style="list-style-type: none"> i. Document Production: Using Word or Open office do page setting, formatting of text, inserting and editing with tables, inserting image ii. Data Manipulation: Creating blank database, creating queries, creating reports iii. Spreadsheet: Entering formula, functions, data sorting, validation, filter iv. Data analysis, Graph, Charts, Pivot table 			

- v. **PowerPoint** : Creating presentation , animation.
- vi. **Taking the Output:** You need to be able to produce hard-copies of your work (printing) and, in some cases, prepare data for use in other applications. How to load local printer, network printer and take the printout.
- vii. **Computer Security:** Know about security center of computer, antivirus, configuring firewalls
- viii. **Internet:** Browsing and searching information on net, access to research journals, articles, online commerce (E-Commerce)

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC3P3	PRACTICAL-III	03 / Week	02

Project Submission and Presentation

Following are suggestive projects. Projects of similar nature based/related to syllabus can be taken.

1. Collection of Data to work on population dynamic and statistic application
2. Industrial visit report for study the organizational management
3. To study blood groups during blood donation camps and make comparative data.
4. To collect the data of environment related issues from print media and present the data.
5. To visit to special schools and present the visit report.
6. Presentation of case study related to cyber crime.
7. Interview leaders from different fields and present the report. Film/Book review on syllabus related topics

PRACTICAL EXAMINATION
S. Y. B. Sc. Semester- III
Code : USHSC3P1

Duration: 3 Hrs

Total Marks : 100

Q. I	Major Experiment	30 Marks
	Determination of Blood group of human	
	OR	
	Determination of haemoglobin and preparation of haemin crystal	
Q. II	Minor Experiment	20 Marks
	Bacterial staining for gram positive and gram negative bacteria	
	OR	
	Microbe testing for environmental pathogen	
Q. III	Identify and describe two from each group	30 Marks
	a. Leukemic cell/ELISA/Yeast cell b. Virus photo (Polio virus/ H1N1 virus/Aids virus) c. Epidemiology (Leptospirosis/Ebola/Psoriasis) d. Parasite (Plasmodium/Enterobius/Ascaris/Wucheria/Tapeworm) e. Blood Cell Types	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
S. Y. B. Sc. Semester- III
Code : USHSC3P2

Duration: 3 Hrs

Total Marks : 100

Q. I	Major Experiment	30 Marks
	Problem: data analysis Natality and Mortality	
	OR	
	Mock Censes	
	OR	
	Nine dot problem	
	OR	
	Any two IT based practical	
Q. II	Minor Experiment	20 Marks
	Estimation of population density of Daphnia	
	OR	
	Determination of pH of water with pH paper and Universal indicator	
	OR	
	Determination of pH of soil with pH paper and Universal indicator	
Q. III	Identify and describe two from each group	30 Marks
	<ul style="list-style-type: none"> a. HVS/ Decibelometer/pH meter. b. Ecological Cycles—O₂ Cycle/CO₂ Cycle/H₂O Cycle/N₂ Cycle c. Age Pyramids –Stable/Declining/Growing d. Growth curves –S shape/J shape e. Bell Experiment/ Evolution of O₂ during photosynthesis. 	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
S. Y. B. Sc. Semester- III
Code : USHSC3P3

Duration: 3 Hrs

Total Marks : 100

Q. I	*Project to be given from the suggestive topic given in the syllabi at the beginning of the semester.	
	Evaluation to be done during practical examination.	
	Marks distribution for project	
	1. Identification and outline of problem	20
	2. Data Collection	30
	3. Report submission	20
	4. Presentation and viva	30

Semester End Examination - Undergraduate Programmes of S.Y.B.Sc.

Semester End Theory Assessment - 75% (75 marks)

- 1. Duration** - These examinations shall be of 2.5 hours duration.
- 2. Theory question paper pattern:**
 - i. There shall be four questions.
 - ii. On each unit there will be one question & fourth question will be based on entire syllabus.
 - iii. Question number 1, 2 and 3 will be of 20 marks each (40 marks with internal options), while Question 4 will be of 15 marks (30 marks with internal options).
 - iv. All questions shall be compulsory with internal choice within the questions.
 - v. Questions may be sub divided into sub questions as a, b, c, d & e, etc & the allocation of marks will depend on the weightage of the topic.

S.Y.B.Sc. Semester End Theory question paper pattern

Time: 2½ Hrs.

Maximum Marks: 75

Instructions:

1. All questions are compulsory

Q. 1		<i>Based on Unit I</i>	
	A		07
		OR	
	A		07
	B		08
		OR	
	B		08
	C	Attempt any one of the following	05
		i.	
		ii.	
Q. 2		<i>Based on Unit II</i>	
	A		07
		OR	
	A		07
	B		08
		OR	
	B		08
	C	Attempt any one of the following	05
		i.	
		ii.	
Q. 3		<i>Based on Unit III</i>	
	A		07
		OR	
	A		07
	B		08
		OR	
	B		08
	C	Attempt any one of the following	05
		i.	
		ii.	
Q. 4		<i>Mixed questions Attempt any THREE</i>	15
	a	<i>Based on Unit I</i>	
	b	<i>Based on Unit I</i>	
	c	<i>Based on Unit II</i>	
	d	<i>Based on Unit II</i>	
	e	<i>Based on Unit III</i>	
	f	<i>Based on Unit III</i>	

Semester III Syllabus

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC401	Anthropology and Archeology	45	2
<ul style="list-style-type: none"> To introduce the students to basic concepts of Anthropology and Archeology 			

Unit I	<ul style="list-style-type: none"> Anthropology: Definition, Concept, Scope. Branches of Anthropology. Study of Anthropology through archeology. 	15
Unit II	<ul style="list-style-type: none"> Definition and aims of archeology. Branches of archeology. Archeology and History, archeology and other sciences. Field archeology, exploration, excavation and dating antiquities. 	15
Unit III	<ul style="list-style-type: none"> Heritage tourism: Meaning, scope and importance of tourism. Tourist resources with special reference to heritage monuments in Maharashtra (Gharapuri, Kanheri, Ajanta, Elora). Forts and monuments as tourist resources in Maharashtra. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC402	Sex, Fertility and Psychosocial issues	45	2
<ul style="list-style-type: none"> To create awareness about the sex related issues and problems 			

Unit I	<ul style="list-style-type: none"> Male and female Reproductive systems, sex cycle. 	15
Unit II	<ul style="list-style-type: none"> Sex Hormone related disorders Hirsutism, Hermaphroditism, Infertility, Disorder of Puberty, Menstrual Failure, PCOD, Diseases: Breast cancer, Prostate cancer, 	15
Unit III	<ul style="list-style-type: none"> Third Gender, Transgender, lesbian, Gay, Psychosocial issues related to sex and fertility 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC403	Biotechnology	45	2
<ul style="list-style-type: none"> To understand Biotechnological applications in agriculture, medicine, organ transplant and human genome study 			

Unit I	<ul style="list-style-type: none"> Genetic engineering: Application in agriculture (Nitrogen Fixation, GM crop, Bt cotton, yellow rice), transgenic animal 	15
Unit II	<ul style="list-style-type: none"> Application of Biotechnology in Pharmaceutical industry (production of hormone). Biomolecules of nutritional significance- Antioxidants (Bioflavonoid, phytochemicals, Lycopene, Anthocyanin). Applications of regenerative stem cells. 	15
Unit III	<ul style="list-style-type: none"> Human Genome Project: Questions, legislation and policies Ethical issues: Protection for personal genetic information, informed consent. Genetic testing, personalized medicines. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC404	Economics	45	4
<ul style="list-style-type: none"> To familiarize the students with the basic concepts of Micro Economics, Economic theories and its application. 			

Unit I	<ul style="list-style-type: none"> Micro economics- Meaning-Definition- Features- Distinction between Micro Economics and Marco Economics. Factors of Production - Meaning and Features of Land, Labour and Capital, Types of Capital, Entrepreneur Qualities and functions. 	15
Unit II	<ul style="list-style-type: none"> Concept of Demand- Types of Demand- Determinants of market demand- Law of Demand-Elasticity of Demand- Income, Cross & Promotional- Consumer Surplus- Demand forecasting Meaning of Total Output. Stock and Supply- Supply of Individual Seller and Market Supply- Determinants of Market Supply and Law Supply. 	15
Unit III	<ul style="list-style-type: none"> Forms of Market and Price Determination - Perfect Competition - Price determination under perfect competition- Monopoly- Meaning, Features and types Monopolistic Competition, Meaning and Features of Oligopoly. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC405	Economics and Psychology	45	4
<ul style="list-style-type: none"> To introduce to basic concept of currency. To understand Cause of Social behavior and thought 			

Unit I	<ul style="list-style-type: none"> Barter system: meaning , importance, advantages, disadvantages and types . National income-meaning and definition, estimation of national income, difficulties. Money- Meaning and Functions of Money, Supply of Money, Constituents of Money supply. Measures of Money Supply in India (including Liquidity Concepts). 	15
Unit II	<p>Social Psychology: A working definition</p> <ul style="list-style-type: none"> Social Psychology : Scientific Nature Focus on Individual Behaviour Causes of Social Behaviour and Thought Brief History of Social Psychology Social cognition: Schemas: Mental Frameworks for organizing and using social information. Heuristics Automatic and controlled processing: basic modes of social thought. Potential Sources of error in social cognition. Affect and Cognition: how feelings shape thought and thought shapes feelings. 	15
Unit III	<p>Social Perception:</p> <ul style="list-style-type: none"> Concept of Attribution Theories of Attribution Errors and Biases in Attribution Impression Formation <p>Prosocial and Antisocial Behavior</p> <ul style="list-style-type: none"> Concept of Prosocial Behavior and related concepts Bystander Effect Determinants of Prosocial Behavior Theories of Altruism Antisocial Behavior <p>Interpersonal Attraction and close Relationship, Stereotyping, Prejudice, and Discrimination</p>	15

Semester IV : Practicals

Identification for all practicals should be shown with available models, photographs, Google images, diagrams from books whichever is available.

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC4P1	PRACTICAL-I	03 / Week	02
<p>Photographs and Charts.... Identification</p> <ol style="list-style-type: none"> 1. Male and female reproductive system, T.S. of Ovary and testis, Menstrual cycle. 2. Breast cancer, prostate cancer, polycystic ovary, Infertility disorders for structure of sperms. 3. Hirsutism, Hermaphroditism 4. Bt cotton, Nitrogen fixing bacteria, SCID, 5. Transgenic animals (Dolly, Polly, Fish, Mouse, pig) Transgenic crops (Sweet Corn, Tomato, Cauliflower) 6. Anti Oxidant and flavonoids – Blackberries, Cherries, Grapes, Broccoli, Spinach, Onion, Beetroot, Dark Chocolate, Green Tea. 7. Symbols used in pedigree chart 			

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC4P2	PRACTICAL-II	03 / Week	02
<ol style="list-style-type: none"> 1. Antiquities from archeological sites 2. Excavation/Archeological site/Monuments----- Identification and location on map 3. Different currency ----identification 4. To study the bystander effect through case study method 5. Stroop Effect 6. Method of Loci 7. Short Term memory: Recognition and recall test. 8. Different methods to calculate National income. 			

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC4P3	PRACTICAL-III	03 / Week	02
<p>Project Work</p> <ol style="list-style-type: none"> 1. Visit to National/cooperative banks to study the management and present the report. 2. Visit to RBI/ SEBI to study the management and present the report. 3. Visit to WTO/NABARD/ Income Tax House to study the management and present the report 4. To study the International currencies and explain the exchange value. 5. Film review of heritage site and its presentation. 6. Feasibility report for entrepreneur activity. 7. Report of the actual entrepreneur activity performed. 8. To collect the data of LGBT related issues from print media and present the data. 9. Interview entrepreneur from different fields and present the report. 10. Survey organic products in market and present the report. <p style="text-align: center;">Field Visit to Heritage site is compulsory</p>			

PRACTICAL EXAMINATION
S.Y.B.Sc. Semester- IV
Code : USHSC4P1

Duration: 3 Hrs

Total Marks : 100

Q. I	Identify and describe	30 Marks
	a. Male and female reproductive system/T.S. of ovary /T.S of testis / Menstrual cycle b. Brest cancer /prostate cancer / polycystic ovary / structure of sperm. c. Hirsutism / Hermaphroditism	
Q. II	Identify and describe	30 Marks
	a. Bt cotton/Nitrogen fixing bacteria/SCID b. Transgenic animals --- Dolly/Polly/Fish/Mouse/Pig c. Transgenic crops---Sweet Corn/Tomato/Cauliflower	
Q. III	Identify and describe any two from each group	20 Marks
	a. Antioxidants and flavonoid food sources : Blackberry / Cherry / Grapes / Capsicum / Onion / Spinach / Brocoli /Beetroot/Green Pea/Dark Chocolate). b. Symbols used in pedigree charts	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
S. Y. B. Sc. Semester- IV
Code : USHSC4P2

Duration: 3 Hrs

Total Marks : 100

Q. I	Major experiment (Any one of the following)	30 Marks
	a. Stroop Effect b. Method Of Loci c. Short Term Memory: Recognition ,Recall test	
Q. II	Minor experiment	30 Marks
	1. Identify and Describe - Antiquities from Archeological sites (Any three)	
	OR	
	1. Show location on map and Describe - Excavation/ Archeological sites (Any Three)	
	2. Different methods to calculate national income	
	OR	
	2. Case study – To study bystander effect	
Q. III	Identify and describe	20 Marks
	a. Currencies from Different Nations -----Any Two b. Identify location on map and Describe ---- monuments (Any Two)	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
S. Y. B. Sc. Semester- III
Code : USHSC4P3

Duration: 3 Hrs

Total Marks : 100

Q. I	*Project to be given from the suggestive topic given in the syllabi at the beginning of the semester.	
	Evaluation to be done during practical examination.	
	Marks distribution for project	
	1. Identification and outline of problem	20
	2. Data Collection	30
	3. Report submission	20
	4. Presentation and viva	30

Semester End Examination - Undergraduate Programmes of S.Y.B.Sc.

Semester End Theory Assessment - 75% (75 marks)

- 1. Duration** - These examinations shall be of 2.5 hours duration.
- 2. Theory question paper pattern:**
 - i. There shall be four questions.
 - ii. On each unit there will be one question & fourth question will be based on entire syllabus.
 - iii. Question number 1, 2 and 3 will be of 20 marks each (40 marks with internal options), while Question 4 will be of 15 marks (30 marks with internal options).
 - iv. All questions shall be compulsory with internal choice within the questions.
 - v. Questions may be sub divided into sub questions as a, b, c, d & e, etc & the allocation of marks will depend on the weightage of the topic.

S.Y.B.Sc. Semester End Theory question paper pattern

Time: 2½ Hrs.

Maximum Marks: 75

Instructions:

1. All questions are compulsory

Q. 1		<i>Based on Unit I</i>	
	A		07
		OR	
	A		07
	B		08
		OR	
	B		08
	C	Attempt any one of the following	05
		i.	
		ii.	
Q. 2		<i>Based on Unit II</i>	
	A		07
		OR	
	A		07
	B		08
		OR	
	B		08
	C	Attempt any one of the following	05
		i.	
		ii.	
Q. 3		<i>Based on Unit III</i>	
	A		07
		OR	
	A		07
	B		08
		OR	
	B		08
	C	Attempt any one of the following	05
		i.	
		ii.	
Q. 4		<i>Mixed questions Attempt any THREE</i>	15
	a	<i>Based on Unit I</i>	
	b	<i>Based on Unit I</i>	
	c	<i>Based on Unit II</i>	
	d	<i>Based on Unit II</i>	
	e	<i>Based on Unit III</i>	
	f	<i>Based on Unit III</i>	

REFERENCES

Anthropology:

1. Ember & Ember 2008 'Anthropology' (12th edition), Pearson Prentice Hall of India Pvt. Ltd., New Delhi
2. Evans-Prichard, E.E 1990 'Social Anthropology', Universal Book Stall, Delhi.
3. Harris, Marvin 1983 'Cultural Anthropology', Harper & Row Pub, New York
4. Honigman J. 1997 'Handbook of Social and Cultural Anthropology', Rawat Publication, New Delhi.

Archeology

5. Archaeological Survey of Western India, Vol.I,IV and V. (1874, 1964 and 1970)
6. A. K. Tourism Development: Principals and practices.
7. Piggot Stuart, Approach to Archaeology, Adams and Charles Black, London, 1959
8. Tourism Anand M.M., Tourism and Hotel Industry in India. Bhatia

Biotechnology

9. Biotechnology by P.K. Gupta
10. Biotechnology Fundamental and Application S.S. Purohit.
11. Biotechnology by John Smith, Cambridge University Press
12. Molecular biotechnology (therapeutic Application and Strategies) by Sunil Maulik and Salil D.P
13. Recombinant biotechnology by James D. Watson

Ecology

14. Ecology: N.S. Subramanyam. and AVSS. Sambamurthy, Narosa
15. Add one or two books Sheetal

Economics:

17. Ahuja H. L. (2005), Advanced Economic Theory, S Chand and Company, New Delhi.
18. Dwivedi, D N. (2003), Micro Economics : Theory and Applications; Pearson Education (Singapore) Pvt. Ltd, Delhi.
19. Koustsoyiannis, A. (1980) Modern Economics, the Macmillan Press Ltd. London. C.

Environmental Science

20. Ahluwalia V.K. & Malhotra Sunita: Environmental Science. Ane Books India 2006.
21. Dara S.S. & Mishra D.D.: Text book of Environmental Chemistry & Pollution Control. Revised edition; Publish. S. Chand.
22. S.C. Santra: Environmental Science. New Central Book Agency (P) Ltd. 2001

Epidemiology

23. Public Health & Sanitation Part I &II: The All India Institute of Local Self Government. Sthanikraj Bhavan, C.D. Barfiwala Marg, Andheri (W), 400058,
24. Park's Textbook of Preventive & Social Medicine, 7th E.d: K.Park, M/S Banarsidas Bhanot Publishers, 1167, Premnagar, Jabalpur, 482001

Immunology

25. Immunology, 4th Ed. Janis Kuby, W. H. Freeman & Co.
26. Immunology, 6th Ed. Ivan M. Roitt
27. Immunology, Tizzard, Thomson Publishing Co

Physiology

28. Human Physiology by CC Chaterjee vol I and Vol-II Central Book Agency
29. Anatomy and Physiology by Seeley Stephen Tale

Psychology

30. Baron, R. A., Branscombe, N. R., & Byrne, D. (2009). *Social Psychology*.
31. Boston, MA: Pearson/Allyn and Bacon. Franzoi, S. L. (2008). *Social Psychology* .
32. Ciccarelli, S. K. & Meyer, G. E. (2006). *Psychology*. Pearson Education inc. and Dorling Kindersley Publishing inc. New Delhi; first Indian reprint 2007.
33. Lahey, B. B. (2007). *Psychology : An Introduction*. (9th ed.). McGraw- Hill Publications, New York

Histology

- 34.. Bailey's Text Book of Histology, 6th Ed: Scientific book Agency
35. . General Endocrinology 3rd Ed, : Turner and Bagnara, Saunders.
36. Basic Histology by L.Carlos Junquera
37. Follicular growth and ovulation by Anand Kumar Amal M

Management

38. Management – A competency building approach – Heil Reigel / Jackson/ Slocum
39. Understanding Organizational Behavior – Udai Pareek
40. Organizational Behavior – Stephen Robbins
- 41.V.S.P. Rao & V. Hari Krishna: Management Text & Cases (Excel Books)