UNIVERSITY OF MUMBAI

Program: B.A. / B. Sc.

F. Y. B. A./B. Sc.

Course: Human Sciences

(Credit Based Semester and Grading System

with effect from the academic year 2015–2016)

Preamble

The basic thoughts and understanding in the programme of B.Sc. with Human Science is, many or around 60 % students after their graduation leave higher education and opt for jobs. These jobs are in Government offices, Municipal Corporations, private companies or, in schools as teachers. They are absorbed as science graduates. Even when the students opt for management carriers they are considered as science graduates at entry level. Thus the specialization or the major subject does not have relevance unless the students want to pursue the carrier in the field of research or higher education.

Among all higher studies Masters in management is a most preferred option because of availability of lucrative jobs. Among the specializations in management studies Human Resource Management is one among the preferred choice. When a person works in any office it is needed that the concerned understands the psychology of organization, the co workers, the officers and also the customers.

With all these requirements of job market University has decided to introduce the graduation course in Arts and science as B. A. /B. Sc. Human science. In this the topics considered are Origin of Human Science, Evolution of human being, Cultural evolution, Social evolution, Development of communication and language, Anthropology, Family culture, Organization culture, Management techniques and many more. The Bachelor's Degree B.A./B.Sc. Human Sciences is a three year (six semesters) innovative interdisciplinary programme that focuses on understanding the human being holistically from biological, psychological and social perspectives. It helps in comprehending the human being from birth to death with a whole gamut of perspectives from origin, ancient history, its evolution to modern times. It is an amalgamation of various disciplines of sciences namely psychology, sociology, anthropology, paleontology, neuroscience, genetics, home science and other allied spheres of knowledge. A learner with such a vast knowledge and understanding of Human Science will be fit to work in any industry/ Government offices/ Schools or any other place.
A learner if wish to go for higher education he can opt for Masters in Psychology, Antropology or Masters in Management.

Eligibility Criteria for admission:

B. A. /B. Sc. in "Human Science" Program is open to candidates who have passed H. SC. Examination in Arts or Science from Board of Maharashtra or its equivalent.

Eligibility for teaching Human Sciences course:

1. M. Sc Zoology with 55% / B+ at post graduation NET/SLET qualified for full time post in Human science
2. M. A./M. Sc. in History/Sociology /Psychology /Economics/ Anthropology with 55% / B+ at post graduation for a Part Time/CHB
3. M. Sc. In Information Technology with 55% / B+ at post graduation for CHB
4. M. B. A./M.M.S. with 55% / B+ for CHB

Course Structure & Distribution of Credits:

B. A./B. SC. in Human Science consists of 5 (Five) theory courses, 3 (Three) practical lab courses in each Semester. Each theory course will be of either of 2/4 (two/four) credits, a practical lab course will be of 2 (two) credits. A learner earns 20 (twenty) credits per semester and total 120 (one hundred twenty) credits in six semesters.

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

Structure of Semester I

Course Code	Course Title	Lectures	Credit Points
USHSC101	Introduction to Human Science:	45	04
USHSC102	Biodiversity and Ecosystems	45	02
USHSC103	Human Anatomy and Physiology	45	02
USHSC104	Society and Language	45	04
USHSC105	Human Diversity and Habits	45	02
USHSC1P1	Practicals Based on USHSC101, USHSC103		02
USHSC1P2	Practicals Based on USHSC102		02
USHSC1P3	Case studies and Excursion reports		02
Total			20

Semester I
Syllabus

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC101	**Introduction to Human Sciences**	**45**	**04**

Objective :

- To realize the relevance of human sciences in relation to ancient and modern sciences
- To study basic concepts of paleontology

Unit I	**History of Science and Theories of Human origin:** • Milestones in the development of Science, definition and relevance • Ancient Indian Applied Science • Science during the Medieval India: Maturing in Science and Alchemy • History of Modern Life Sciences	**15**
Unit II	**Origin of Life and Human Being** • Mythological approach: Ancient and medieval beliefs (Theories of Cosmozoic, big bang, spontaneous generation, Biogenesis) • Modern hypotheses of origin of life (Biological evolution, chemical and biochemical origin of life) • Biological evolution. • Origin of Human Being Theories of Humanevolution and the geographical impact on the same.	**15**
Unit III	**Paleo-anthropology/Paleontology:** • Fossilization: Processes, types, tracing and records • Biostratigraphy: Concept of stage and zone • Micropaleontology: Microfossils, calcareous, phosphatic, siliceous and organic microfossils • Stromatolites: Morphology, fossil records and modern occurrence • Fossils of Porifera, Arthropoda, Brachiopoda, Mollusca, Echinoderma, Lower vertebrates. • Paleoecology and Paleobotany.	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC102	**Biodiversity and Ecosystems**	**45**	**02**

Objective

- To appreciate biodiversity in plants and animal kingdoms at the time of Human evolution.
- To understand the dynamics of ecosystems existing then.

Unit I	**Kingdom Plantae**: Definition, Broader classification with examples of each group.	**15**
Unit II	**Kingdom Animalia**: Definition, Broader classification with examples of each group.	**15**
Unit III	**Ecosystems:** • Types of Ecosystems • Abiotic factors • Biomass, Energy flow, Food Chain, Energy Pyramids	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC103	**Human Anatomy and Physiology**	**45**	**02**

Objective :

- To study the human body and to understand basic physiology

Unit I	**Study of Human Organ:** Cell, tissues and body fluid , Structure of Human organs • Heart • Lungs • Kidney • Liver • Endocrine glands • Sense organs	**15**
Unit II	**Appendicular and Axial Skeleton, Movements:** • Axial skeleton and Appendicular skeleton. • Movement: structure of muscle, Physiology of muscle contraction	**15**
Unit III	**Basic Physiology:** • Physiology of Nutrition. • Physiology of Respiration. • Physiology of Circulation. • Physiology of Excretion. • Reproduction and Immunology	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC104	**Society and Language**	**45**	**04**

Objective

- To understand the origin and types of communication and language and to provide training in effective communication
- To trace the origin and evolution of society
- To help relate in social interactions and in institutions of society

Unit I	**Origin of Communication, language of words:** • Understanding human communication • What is communication? Its Process, effectiveness and Barriers • Brief history, evolution and the development of communication. • Evolution of languages • Development of Speech- From Non-verbal to verbal, Oral communication • Non-verbal communication: Body language, five senses of communication, gestures and relation with sound. • Mass Communication.	**15**
Unit II	**Social evolution, Social animal, Society formation:** • Early stone-age: A brief survey of Paleolithic, Mesolithic and Neolithic Chalicolithic culture • Early Iron-age culture: Megalithic culture • Brief history of world civilizations: Ancient, medieval and modern periods	**15**
Unit III	**Institutions of Society, Marriage, Family, Religions:** • Approaches: Social Cohesion and Social identification • Types of groups: Primary and Secondary. • Development, Dispersal and transformation of groups **Relationship in the society** • Friendship nature and functions. • Social Institutions: Marriage and Family (functions, types and changes) • Kinship (functions & basic terminology) **Religion** • Evolution of Religion and introduction to various religions • Development of various religious practices • Concept of Universal Religion	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC105	**Human Diversity**	**45**	**02**

Objective

- To explain the aspects of human diversity in relation to geographical differences, cultural differences and Environmental impacts.

Unit I	**Human Diversity** • Geographical distribution, realms • Impact of Climatic and Environmental conditions then existing.	**15**
Unit II	**Nutrition And Lifestyle** • Type of food then available • Types of tools used, inventions like fire. • Development from Hunters to Food gatherers and Farmers. • Traditional costumes • Traditional arts and crafts	**15**
Unit III	**Analysis of Environmental Data:** Conceptual Foundations, Data Exploration , Screening & Adjustments • Purpose of data exploration, screening & adjustments • Common parameters and statistics i. Parameters and statistic ii. The "normal" distribution iii. Measures of central tendency, spread, non-normality • Single variable plots i. Empirical distribution function and cumulative distribution functions ii. Histogram iii. Box-and-whisker plot iv. Extreme values ("outliers") • Measures of association • Plots of association • Scatter plot, Co-plot.	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC1P1	PRACTICAL-I	03 / Week	02

Paleo-anthropology

1. **Fossils :**Identification of (Two from each group wherever available)
   - Cnidaria, Annelida, Arthropoda, Mollusca , Echinodermata
   - Lower Vertebrates, Pisces. Amphibia, Aves, Mammals
   - Lower plant groups, Gymnosperms, Angiosperms

2. **Evolution of Human :**Identification of
   - Different stages of evolution of man
   - Different tools used by man in pre-historic time
   - Gestures, use of opposable thumb

3. **Human Anatomy:**Identification of
   - Heart, Lung, Kidney, Eye
   - Bones of man (Appendicular and Axial skeleton)
   - Muscles of skull and eye

4. **Nutrition:**
   - Different types of root and leafy vegetable eaten by man in pre-historic time.

5. Qualitative Study of Amylase Activity

6. Tests for Carbohydrates, Lipids and Proteins.

7. Colorimetric estimation of protein in hen eggs – Biuret or Folin – Lowry method

8. Detection of Adulterants in the milk. (Starch and urea- 2 test per adulterant).

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC1P2	**PRACTICAL-II**	**03 / Week**	**02**

1. Data collection by using sampling techniques and its analysis by using statistical methods based on environmental factors, flora and fauna.
2. Kingdom Plantae: Algae, Bryophytes, pteridophytes, Gymnosperms ,angiosperms representative samples only
3. Kingdom Animalia: Invertebrates- major Phyla
4. Vertebrates: major Classes representative samples only
5. Mounting of T. S. Of Cucurbita stem
6. Muscle fiber from Chicken flesh
7. Urine Analysis for normal and abnormal constituents. (Normal Constituents: Urea and Uric acid and Abnormal constituents: Glucose and Albumin)
8. Detection of uric acid from the excreta of bird
9. Study of different types of Ecosystems

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC1P3	**PRACTICAL-III**	**03 / Week**	**02**

Case studies based on the theory.

1. Family Communication related case studies.

Environmental issues and movements related case studies.

2. Excursion and field tour to places to study Biodiversity, Ecosystems.

PRACTICAL EXAMINATION

F. Y. B. Sc. Semester- I

Code : USHSC1P1

Duration: 3 Hrs **Total Marks : 100**

Q. I	**Major Experiment**	**30 Marks**
	Perform the experiment to demonstrate the Qualitative Activity of Amylase.	
	OR	
	Perform the experiment to demonstrate the Qualitative test for Carbohydrates, Lipids and Proteins	
Q. II	**Minor Experiment**	**20 Marks**
	Colorimetric estimation of protein in hen eggs – Biuret or Folin – Lowry method	
	OR	
	Detection of adulterants from milk (Starch / Urea).	
Q. III	**Identify and describe two from each group**	**30 Marks**
	a. Fossil b. Evolution of Human c. Human Anatomy	
Q. IV	**Viva Voce**	**10 Marks**
Q. V	**Journal**	**10 Marks**

PRACTICAL EXAMINATION

F. Y. B. Sc. Semester- I

Code : USHSC1P2

Duration: 3 Hrs **Total Marks : 100**

Q. I	**Major Experiment**	**30 Marks**
	Urine Analysis for normal constituents	
	OR	
	Urine Analysis for abnormal constituents	
	OR	
	Mounting of T. S. Of Cucurbita stem	
	OR	
	Muscle fibre from Chicken flesh	
Q. II	**Minor Experiment**	**20 Marks**
	Two Problems to be solved from the given Data using – Statistical Methods	
Q. III	**Identify and describe two from each group**	**30 Marks**
	a. Kingdom Plantae b. Kingdom Animalia c. Types of Ecosystems	
Q. IV	**Viva Voce**	**10 Marks**
Q. V	**Journal**	**10 Marks**

PRACTICAL

F. Y. B. Sc. Semester- I

Code: USHSC1P3

Total Marks : 100

Evaluation to be done during practical examination.

Q. I	Two case studies to be performed during examination **Marks distribution for each case study** 1. Identifying the topic on which the case study is based and Analysis of Data — **15 Marks** 2. Report submission, Presentation and Viva Voce . — **25 Mrks**	**80 Marks**
Q. II	Report of Excursion to study Biodiversity and Ecosystem and viva voce	**20 Marks**

Semester End Examination - Undergraduate Programmes of F.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.

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

Time: 2½ Hrs. **Maximum Marks: 75**

Instructions:

1. All questions are compulsory

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

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

Structure of Semester II

Course Code	Course Title	Lectures	Credit Points
USHSC201	Neuroscience	**45**	**04**
USHSC202	Fundamentals of Psychology	**45**	**02**
USHSC203	Human Behaviour	**45**	**02**
USHSC204	Genetics	**45**	**04**
USHSC205	Health and Environment	**45**	**02**
USHSC2P1	Based on USHSC201, USHSC204		**02**
USHSC2P2	Based on USHSC205		**02**
USHSC2P3	Case studies report and presentation		**02**
Total			**20**

Semester II

Syllabus

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC201	**Neurosciences**	**45**	**04**

Objective

- To comprehend the structure and functions of the human brain and the nervous system

Unit I	**Evolution of Skull and Human Brain/Mind** • Structure of human skull General features • Structure of human brain General features • Brain Centers • Evolutionary development related to human skull and brain • Sources of information, Structural and functional imaging • Intelligence dependent on brain size • Evolution of human intelligence (Hominidae,Homininae,*Homo sapiens*)	**15**
Unit II	**Peripheral and Autonomous Nervous System:** • T. S. of Spinal Cord • Reflex arc • Reflex action, Types of Reflex actions • Sympathetic nervous system • Parasympathetic nervous system	**15**
Unit III	**Neurotransmitters and their role, Nerve impulse and transmission**: • Structure of neuron , mechanism of nerve impulse • Nerve transmission • Synapse • Neurotransmitters: Acetylcholine, Amino acids; (Glutamate Aspartate, GABA, Glycine) Purines (ATP) • Biogenic amines: Dopamine, Norepinephrine, Epinephrine, Serotonin, Histamine	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC202	**Fundamentals of Psychology**	**45**	**02**

Objective : To study the fundamentals of psychology and its aspects of cognition, intelligence by understanding classical perspectives of psychology

Unit I	**Perspectives in Psychology:** What is Psychology? Brief history of Psychology Contemporary Psychology: The Biopsychosocial approach and Current Perspectives: Neuroscience, Evolutionary Behaviour Genetics Psychodynamic: Behavioural, Cognitive, Social-cultural Research Methods in Psychology, Descriptive, Correlation, Experimental	**15**
Unit II	**Instinct and Innate Behavior:** i. Instinct: Concepts of Instinct: Fixed Action Pattern, examples of Fixed Action Pattern, Significance of instincts. ii. Innate Behavior: Concepts of innate behavior, Types of innate behavior exhibited by plants and animals (orientation, irritability, motivation, tropism, taxes, nest building etc), Significance of innate behavior. iii. Learning and learning theories: What is Learning? iv. Classical Conditioning: Learning by association, Pavlov's v. Experiments: the processes of acquisition, extinction, spontaneous recovery, generalization and discrimination, Applications of Classical Conditioning. vi. Operant conditioning: Learning from the consequences of your behavior, Skinner's experiments: shaping behavior, types of reinforcers, reinforcement schedules, punishment. vii. Applications of Operant Conditioning, Contrasting Classical and Operant condition. viii. Biology, Cognition and Learning: Biological Constraints on Conditioning, Limits on Classical Conditioning, Operant Conditioning, Cognitive processes and classical conditioning, Cognitive processes and operant conditioning	**15**
Unit III	**Cognitive processes:** i. Consciousness and Attention, The Biology of Consciousness, cognitive neuroscience, Dual Processing: The Two-Track Mind Selective Attention: selective attention and accidents, selective inattention (inattentional blindness and change blindness) ii. Memory : What is memory? Memory models, Building memories: Encoding and Automatic processing, Encoding and effortful processing, Memory Storage: Capacity and Location of Long Term Memories in the Brain: Explicit-Memory System and Implicit-Memory System, How emotions affect memory processing: the amygdala emotions and memory, How changes at the synapse level affect memory processing iii. Retrieval: getting information out Measures of retention Retrieval cues, Forgetting: forgetting and the two-track mind, encoding failure, storage decay, retrieval failure: interference and motivated forgetting, Memory construction errors: misinformation and imagination effects, source amnesia, discerning true and false memories, children's eyewitness recall, repressed or constructed memories of abuse.	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC203	**Human Behavior**	**45**	**02**

Objective

- To understand and appreciate the self and role assumed with participation in groups

Unit I	**Behavioural Ecology** • Primate Behavioural Ecology • Analogous and Homologous Organs • Vestigial Organs • Adaptations	**15**
Unit II	**Theoretical Perspectives on Life span Development** Theoretical Perspectives on Life Span Development Psychoanalytic: Sigmund Freud: Psychosexual Stages of Development, Erik Erikson: Psychosocial Stages of Development. Humanistic: Abraham Maslow and Carl Rogers. Cognitive: Jean Piaget: Cognitive Stages in Development, Albert Bandura: Cognitive Learning. Bioecological: Urie Bronfenbrenner. Sociocultural: Lev Vygotsky Attachment theory: John Bowlby, Mary Ainsworth; Attachment theory and close relationships: Cindy Hazan and Philip Shaver Moral development: Jean Piaget, Lawrence Kohlberg, Carol Gilligan.	**15**
Unit III	**Human, Machine interface(HMI)** 1. Human Machine Interface (HMI) : Human Computer Interaction (HCI): What is HCI? Disciplines contributing to HCI, General principles of HCI design, Ergonomic aspects of HCI, New Areas of HCI HMI related risks: workers health and safety Brain-Computer Interface (BCI): Cognitive based neural prosthetics 2. Communication technology and its impact History and Evolution of the Digital Age and the Information Revolution. Computer-Mediated Communication,Internet, One's place in Cyberspace? (Social networking), The Virtual Self. Gender, Sexuality, and Relationships on the Net. Community, Culture, and Communication in Cyberspace. Virtual Communities, Communication, and Culture in Virtual Communities. Social Norms, Crime, and Punishment on the Electronic Frontier, Privacy and Surveillance in the Digital Age. Producing, Regulating, and Protecting Information in Cyberspace, The Rest of the World and the Net. Our future in the Technology era.	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC204	**Genetics**	**45**	**04**

Objective

- To understand the basic concepts of genetics, inheritance, sex determination and Counseling for inherent disorders, infertility

Unit I	**Mendelian Inheritance, Genetic material and Chromosomal theory:** • Mendelian inheritance: Monohybrid and dihybrid ratio , dominance, co- dominance, autosomal (recessive and dominant inheritance), X-linked recessive and dominant inheritance , Y linked and Z linked • Genetic material: Nucleic acids structure of DNA &RNA • Chromosomal theory of inheritance	**15**
Unit II	**Sex determination**, **Chromosomal anomalies:** • Types of Sex determination • Chromosomal types of sex determination:Haploid, XX, XO, XX-XY, and ZZ- ZW. • Chromosomal anomalies : Autosomal , sex chromosomal	**15**
Unit III	**Genetic counseling:** • Common hereditary disorders in a family • Disorder from consanguineous marriage • Test for sex determination , Amniocentesis • IVF technique	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC205	**Health and Environment**	**45**	**04**

Objective

- To realize the relationship between nutrition, lifestyle and environment on health and fitness

Unit I	**Health and Nutrition:** • Basic food groups • Balanced diet and recommended dietary allowances • Under-nutrition and deficiency: Anemia, Vitamin A , Vitamin D, Iodine and other deficiency disorders • Mal-nutrition during pregnancy and lactation. • Diet related chronic diseases namely overweight and obesity, cardiovascular disease, diabetes, osteoporosis, cancer	**15**
Unit II	**Health and Life style**: • Importance of nutrition on health and fitness • Influence of different cultural cuisine on nutrition and lifestyle • Modern lifestyle changes with regards to foods and nutrition for example microwave cooking, ready to make/eat preparations, packaged and fast foods and other modern methods of cooking; its impact on health • Stress management: Conditions of stress, types of stress, effects and symptoms, stress management techniques	**15**
Unit III	**Pollution and Health:** • Infections: Bacterial and fungal infections of Skin, Respiratory track, Intestinal track, Ear, Eye. • Allergic reactions on skin, Respiratory track, Intestinal track. • Abdominal and Intestinal diseases • Dental Disorders – dental carries and dental pain • Skeletal Muscular Systems – back pain, spondylosis • Central Nervous System – impairment of neurological development, peripheral nerve damage and headaches • Common diseases – malaria, chicken pox, septic wounds, congenital abnormalities, • Cardiovascular diseases. • Cancer types, cause, treatment.	**15**

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC2P1	**PRACTICAL-II**	**03 / Week**	**02**

Identification

- Skull of man to trace the evolution of man
- Brain of Man, Structure of neuron, T. S. of Spinal cord, Reflex arc, Sympathetic nervous system, Parasympathetic nervous system.
- Evidences of Evolution: Homologous and analogous organs, vestigial organ
- Barr body , Types of chromosomes
- Study of Normal Karyotypes
- Identification of Chromosomal Anamolies-Downs Syndrome, Klinefeiter's syndrome, Turner's syndrome with karyotypes.

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC2P2	**PRACTICAL-II**	**03 / Week**	**02**

- Haemoglobinometer-Operation and its use
- Test for Haemoglobin
- Identification of food grains, Lentils, Fibrous food,
- Recipes for quick, healthy breakfast
- Preparation of chart for balanced diet
- Study of Body Mass Indexformula relating weight and height
- Determination of nutritional status by BMI
- ECG
- Identification of Lung, Liver, Kidney
- Joints: Hand to girdle, elbow, wrist, Leg to girdle, knee, ankle.

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC2P3	**PRACTICAL-III**	**03 / Week**	**02**

1. To study case studies/problems, make report and do presentation. (Some Sample case studies are given herewith).
2. Study tour to Geological centers/Museum to study fossils, artifacts..

PRACTICAL EXAMINATION

F. Y. B. Sc. Semester- II

Code : USHSC2P1

Duration: 3 Hrs **Total Marks : 100**

Q. I	**Major Experiment**	**30 Marks**
	Bar Body	
	OR	
	Study of normal Kryotypes	
Q. II	**Minor Experiment**	**20 Marks**
	Identification of chromosomal anomalies	
	OR	
	Types of chromosomes	
Q. III	**Identification (06 Specimens - 5 marks each)**	**30 Marks**
	a. Skull (Bones of skull) b. Brain (lobes) c. Structure of neuron/ Spinal Cord d. Reflex arc/Sympathetic NS/ Parasympathetic NS e. Analogous/ homologous organs f. Vestigial organs	
Q. IV	**Viva Voce**	**10 Marks**
Q. V	**Journal**	**10 Marks**

Code : USHSC2P1

Duration: 3 Hrs **Total Marks : 100**

Q. I	**Major Experiment (Any Two of the following)**	**30 Marks**
	a. Test for haemoglobinometer and its operation b. Recipes for quick healthy breakfast c. Recipes for quick healthy breakfast	
Q. II	**Minor Experiment (Any Two of the following)**	**20 Marks**
	a. Test for Hb b. Calculate BMI from given Chart c. Preparation of Nutrition Chart	
Q. III	**Identification (06 Specimens - 5 marks each)**	**30 Marks**
	a. Food grains (___/___/__) b. Lentils (___/____/___) c. Fibrous food (____/____/___) d. ECG (_____/_____) e. Comment on given BMI f. Comment on given BMI	
Q. IV	**Viva Voce**	**10 Marks**
Q. V	**Journal**	**10 Marks**

PRACTICAL

F. Y. B. Sc. Semester- I

Code: USHSC1P3

Total Marks : 100

Evaluation to be done during practical examination.

<table>
<tr><td>Q. I</td><td>Two case studies to be performed during examination
Marks distribution for each case study<table><tr><td>1. Identifying the topic on which the case study is based and Analysis of Data</td><td>15 Marks</td></tr><tr><td>2. Report submission, Presentation and Viva Voce .</td><td>25 Mrks</td></tr></table></td><td>80 Marks</td></tr>
<tr><td>Q. II</td><td>Report of Excursion to study fossils and artifacts and viva voce</td><td>20 Marks</td></tr>
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Semester End Examination - Undergraduate Programmes of F.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.

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

Time: 2½ Hrs. **Maximum Marks: 75**

Instructions:

1. All questions are compulsory

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

TEXTS/REFERENCES/SUGGESTED READINGS:

Anthropology

1. Social Anthropology. Evans-Prichard, E.E, New Delhi: Universal Book Stall.
2. Cultural Anthropology. Harris Marvin New York: Harper & Row Publication.
3. Cultural Anthropology. Havilland W A.,London: Harcourt Brace College Publication.
4. Handbook of Social and Cultural Anthropology. Honigman J.,New Delhi: Rawat Publication.
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Botany

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