

UNIVERSITY OF MUMBAI



Program: B.A. / B. Sc.

T. Y. B. A. / B. Sc.

Course: Human Sciences

(Credit Based Semester and Grading System
with effect from the academic year 2016–2017)

T. Y. B. Sc. (Human Sciences)
Structure of Semester V

Course Code	Course Title	Lectures	Credit Points
USHSC501	Sociology : Urban sociology, Sociology of work, industrialization, urbanization modernization, emergence of women movement, new people's movement , Mass media propaganda and public opinion	45	2
USHSC502	Constitutional Law : Administrative law , RTI, PIL, Company law , Family law, Labour law , Human right (fundamental rights) , women right , Legal language , children right , Legal writing.	45	2
USHSC503	Entrepreneurship Management	45	4
USHSC504	Nutritional Biochemistry	45	4
USHSC505	Human developmental (fertilization onwards), surrogacy and ageing	45	2
USHSC5P1	Based on USHSC502 , USHSC 503 & USHSC 504		2
USHSC5P2	Based on USHSC501 & USHSC 505		2
USHSC5P3	Project Work: Case Studies for Entrepreneurship: Success and failure		2
Total			20

Structure of Semester VI

Course Code	Course Title	Lectures	Credit Points
USHSC601	Clinical psychology, Criminal psychology, Mood and Anxiety Disorders, Psychotherapy(counseling, yoga, spirituality, meditation, Hypnotisium) industrial psychology, Health psychology , ethics	45	2
USHSC602	Environmental Science: Pollution, Environment impact assessment Disaster management,	45	2
USHSC603	Forensic Science Forensic psychology and Forensic toxicology	45	4
USHSC604	Home Science : Microbiology, Preservation, Adulteration, Food Service Management and Exercise Physiology.	45	4
USHSC605	IT: m-commerce, Interactive Computer graphic, Multimedia system	45	2
USHSC6P1	Based on USHSC601 and USHSC 602		2
USHSC6P2	Based on USHSC 603, and USHSC604		2
USHSC6P3	Project Work: Case Studies for Entrepreneurship: Success and failure		2

Total	20
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Semester V Syllabus

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC 501	Sociology :Urban sociology, sociology of work, industrialization, urbanization modernization, emergence of women movement, new people's movement , Mass media propaganda and public opinion	45	2
<ul style="list-style-type: none"> To understand urbanization, society and mass media. 			

Unit I	<ul style="list-style-type: none"> Urban sociology: City, Urban, Urbanism. Urbanization, Industrialization and Modernization. History of Urbanization In India: During Colonial Period, Post Independence Period, Basic Features and New Trends of Indian Urbanization (Reflected in latest census) 	15
Unit II	<ul style="list-style-type: none"> Sociology of work: Work, Work behavior, Work Environment, Work Ethics and Work Culture. Industry: Precondition and consequences Understanding industry in global Scenario Development of Sociology of Work In India Farmers Suicide: causes and preventive measures 	15
Unit III	<ul style="list-style-type: none"> Mass media: Meaning, Role, it's Types and Functions of Mass media Theories of Mass media Semiotics: Meaning, Sign and significance Marxist View on Media Ownership and Control of capitalist society Propaganda and public opinion, Mass media and rumors 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC 502	Constitutional Law : Administrative law , RTI, PIL, Company law , Family law, Labour law , Human right (fundamental rights) , Women right , Legal Language , Children right , Legal Writing.	45	2
<ul style="list-style-type: none"> To understand constitution, fundamental rights and laws. 			

Unit I	<ul style="list-style-type: none"> Indian constitution: Overview Fundamental Rights and Fundamental Duties Directive Principles of State Policy RTI, PIL and Consumer Protection Act (1986) 	15
Unit II	<ul style="list-style-type: none"> Family Law: Hindu Law, Muslim Personal Act Violation of Women and Children rights and corrective measures Feminist movement 	15

Unit III	<ul style="list-style-type: none"> • Labour Law • Factory Act • Trade Union Act • Employee compensation act • Minimum Wages Act 	15
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Course Code	Course Title and Contents	Lectures	Credit Points
USHSC 503	Entrepreneurship Management	45	4
<ul style="list-style-type: none"> • To develop managerial skills and understand legality involved in business ownership. 			

Unit I	<ul style="list-style-type: none"> • General concept of entrepreneurship: Definition and Challenges • Entrepreneurial Motivation • Building business plan: Strategic management Form of ownership Franchising 	15
Unit II	<ul style="list-style-type: none"> • Financial issues: Managing Cash Flows Financial Plan • Marketing the company: Marketing Plan Creativity E-commerce and New internet Entrepreneurs • Staffing and Leading 	15
Unit III	<ul style="list-style-type: none"> • Legal forms of business ownership: Taxation Legal issues • Entrepreneurs competencies: Decision making and problem solving Communication Creativity and business opportunity identification • Entrepreneurial success and failures 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC 504	Nutritional Biochemistry	45	4
<ul style="list-style-type: none"> • To understand the basic elements of food biochemistry. 			

Unit I	Carbohydrates: Composition and Classification, Source, functions. and properties. Nutritional significance of dietary fibers.	15
Unit II	Proteins: Composition, classification, sources, and functions. Nutritional	15

	classification of amino acids. Enzymes: Classification and factors affecting enzyme activity and enzymes of clinical significance.	
Unit III	Lipids: Composition, sources, functions, deficiency and excess, fatty acids-essentials and non essential, SFA, USFA, MUFA, PUFA, significance of Fatty acids.	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC 505	Human developmental (fertilization onwards), surrogacy and ageing	45	2
<ul style="list-style-type: none"> To understand stages in human development and sexuality. To understand the ageing process and related problems. 			

Unit I	<ul style="list-style-type: none"> Human development – Biological, psychological, behavioral Factors influencing biological and psychological development (Mother and Foetus) Post -Traumatic Stress Disorder- Social, Psychological, Biological, Treatment. Human dev. Stages (prebirth, birth, infancy, early, middle and late childhood, adolescence, early, middle and late adulthood, death) 	15
Unit II	<ul style="list-style-type: none"> Evolution of human sexuality Surrogacy – meaning and legal aspects Birth control measures STD and Types of STD, 	15
Unit III	<ul style="list-style-type: none"> Ageing – Meaning, natural process, physiology of ageing, apoptosis Causes of ageing – Oxidative loss, concept of telomere, Problems- Eye, Ear, Memory, Strength, Arteries, Stamina, Neuro-degenerative disorders Ageing and population- In context to Global, India, other developing Countries 	15

Semester V**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
USHSC5P1	PRACTICAL-I BASED ON USHSC502 , USHSC503 & USHSC504	03 / Week	02
<ol style="list-style-type: none"> 1. Separation of amino acid by paper chromatography 2. Estimation of lipid by phosphovanilline method from the given sample of serum 3. Effect of pH/temp/concentration of substrate on amylase activity (kinetics). 4. Identification <ol style="list-style-type: none"> a. Glucometer. b. Malnutrition disorder- Marasmus , Kwashiorkar c. Identify the source from the given sample. (Carbohydrate/ Protein/ lipids) 5. Case study <p>Following are the case studies of reaction of people when:-</p> <ol style="list-style-type: none"> a. Terrorist attack on mall b. Dilapidated building falls (case) Joseph d'souza and others v/s state of Maharashtra. c. Road accident (case) Pandit Parmanand Katara v/s union government of India (immediate treatment) d. Bank robbery e. Plane hijack f. Railway accident (case) Bhagat Singh and Sohan Singh v/s Om Sharma and others (compensation in railway accident) 6. Case study <ol style="list-style-type: none"> a. Presentations on <ul style="list-style-type: none"> New Successful Start Ups Established Entrepreneurs b. Case Studies on <ul style="list-style-type: none"> Successful Ventures Failed ventures c. Preparation of Blueprint on Workable Business Model 			

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC5P2	PRACTICAL-II BASED ON USHSC501 & USHSC 505	03 / Week	02
<ol style="list-style-type: none">1. To administer psychological test to understand effects of post traumatic stress disorder on an individual.2. Beck Anxiety Inventory.(BAI)3. Beck Depression Inventory. (BDI)4. Projective Test- Draw- a -person (DAP), (House- Tree- Person HTP), Kinectic Family Drawing (KFD) { 1 of the projective test or a combination of 2 Or 3 will be given for interpretation)5. Case studies<ol style="list-style-type: none">a. Related to violation of fundamental rights-b. IC Golaknath v/s state of Punjabc. Keshwananand Bharti v/s state of Kerala (related to prisoners rights)d. M.C Mehta v/s union of India (Bhopal gas tragedy)e. Minrva mill v/s union of IndiaRelated to consumer protection act 1986-<ol style="list-style-type: none">f. Murli Deora v/s union of India (ban on smoking at public places)g. Shriram fertilizer v/s union of India (Bhopal gas tragedy)6. Identification on Human development embryo (Photographs)7. Different types of birth control (Photographs)8. Different types of Sexually transmitted Diseases (Photographs)			

PRACTICAL EXAMINATION
T. Y. B. Sc. Semester- V
Code : USHSC5P1

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

Q. I	Major Experiment	30 Marks
	Separation of amino acid by paper chromatography	
	OR	
	Estimation of lipid by phosphovanilline method from the given sample of serum	
	OR	
	Effect of pH/temp/concentration on amylase activity	
Q. II	Minor Experiment	20 Marks
	Case studies from constitution and entrepreneur management.	
Q. III	Identify and describe two from each group	30 Marks
	<ul style="list-style-type: none">• Identification of glucometer.• Identify the malnutrition disorder• Identify the source from the given sample. (Carbohydrate/ Protein/ lipids)	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
T. Y. B. Sc. Semester- V
Code : USHSC5P2

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

Q. I	Major Experiment	30 Marks
	Experiments on Post traumatic stress disorder	
	OR	
	Experiments on Anxiety	
	OR	
	Experiments on Depression	
Q. II	Minor Experiment	20 Marks
	One Case Study	
Q. III	Identify and describe two from each group	30 Marks
	<ul style="list-style-type: none">• Stages Of Human Development.• Measures of birth control (photos)• STDs (photos)	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
T. Y. B. Sc. Semester- V
Code : USHSC5P3

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

Evaluation to be done during practical examination.	
Q. 1 Two case studies to be performed during examination	80
Marks distribution for each case study	
a) Identifying the topic on which the case study is based	15
b) Report submission, Presentation and Viva Voce	25
Q. 2 Report of Excursion/ Field report/ Institutional visit	20

Semester VI Syllabus

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC601	Clinical psychology, Criminal psychology, Mood and Anxiety Disorders, Psychotherapy(counseling, yoga, spirituality, meditation, Hypnotisium) industrial psychology, Health psychology , ethics	45	2
<ul style="list-style-type: none"> To understand the clinical aspects in psychology and psychotherapy 			

Unit I	Clinical Psychology <ul style="list-style-type: none"> Defining Abnormality and historical perspectives of abnormality. Panic Disorder and treatments Phobias-Types, Treatment. Obsessive Compulsive Disorder- Symptoms, Treatment. Mood Disorders- Unipolar and Bipolar Disorder, Treatment. 	15
Unit II	<ul style="list-style-type: none"> Fundamental precepts of effective counselling Stages and outcome goals of counselling Counsellor Actions that hamper communication with clients. Ethical principles of professional counseling (Termination) and violation Overview of major therapies in counselling- CBT, PCT, Gestalt, BT. 	15
Unit III	<ul style="list-style-type: none"> Definition and Importance of Health Psychology Characteristics of health compromising behavior. (Alcoholism, Drinking and smoking problem) Placebo as healer Pain and it's Management: <ol style="list-style-type: none"> Clinical issues in pain management Pain and Personality Pain control techniques- (Pharmacological, Surgical, sensory, biofeedback) Alternative Techniques in pain management: Relaxation, Hypnosis, Acupuncture, Yoga, Distraction and guided imagery. 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC602	Environmental Science: Pollution, Environment impact assessment Disaster management	45	2
<ul style="list-style-type: none"> To understand different facets of environment and their management. 			

Unit I	Environmental Pollution: Monitoring and Mitigation: <ul style="list-style-type: none"> Air Pollution: Sources, effects and control measures Water Pollution: Sources, effects and control measures Soil Pollution: Sources, effects and control measures Noise Pollution: Sources, effects and control measures 	15
Unit II	Environment Impact Assessment: <ul style="list-style-type: none"> Concept & process of EIA: Need of EIA; Scope and objectives; Types of environmental impacts; Steps involved in conducting the EIA Studies Concept of Carbon foot prints& Carbon credits. Concept of Life Cycle Assessment and Environmental Quality Monitoring: ISO-14000 	15
Unit III	Disaster Management: <ul style="list-style-type: none"> Natural Hazards (Eg. Tsunami, Floods, Earthquakes, Cyclone, droughts, etc.): Causes, Impacts and mitigation Industrial hazards (fire, explosion, toxic release and dispersion): Causes, Impacts and mitigation Industrial Hygiene and Safety 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC603	Forensic psychology, Forensic Science and Forensic toxicology	45	2
<ul style="list-style-type: none"> To study forensic science and psychology of crime scenario 			

Unit I	<ul style="list-style-type: none"> Forensic psychology: definition and Functions Brain Damage Theories and Types of crime- organized crime, sexual offences, juvenile Theories of crime- social, behavioural and psychological Forensic psychological investigative techniques- poly graph, Narcoanalysis, 	15
Unit II	Forensic Science: <ul style="list-style-type: none"> Basic Principles & Significance History & Development of Forensic Science Organizational structure of Forensic Science labs in Central & State Crime Scene Evidences	15

	<ul style="list-style-type: none"> • Blood, Semen & other Biological fluids • Viscera • Shoe impressions, Tool marks, Tyre marks • Bite Marks • Hair – Animal & Human, Fibres & Fabrics • Glass, Soil, pollen Paint <p>Establishment of identity of Individuals</p> <ul style="list-style-type: none"> • DNA • Fingerprints/Foot prints <p>Anthropology – Skeletal Remains</p> <ul style="list-style-type: none"> • Odontology • Role of Police officers, prosecution & judicial officers. • Role of Forensic scientists, medico-legal doctors. 	
Unit III	<p>Forensic Toxicology:</p> <ul style="list-style-type: none"> • Drug of Abuse and narcotic drugs • Petroleum products • Toxicological examination of poisons and alcohol • Toxicological examination of viscera 	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC604	Home Science : Microbiology, Preservation, Adulteration, Food Service Management and Exercise Physiology.	45	4
<ul style="list-style-type: none"> • To understand the intricacies of Food Science and it's management • To understand the Physiology of Exercise. 			

Unit I	<p>Microbiology of food:</p> <ul style="list-style-type: none"> • Microbial flora, spoilage, sources, characteristics and contamination in the following foods Vegetables, fruits, sea foods, meat products, milk and milk products. • Techniques of food preservation – Temperature (High and low). Use of ionizing radiations and microwave heating: • Use of dehydration and concentration Methods and techniques used (Air convection, Drum driers and Vacuum driers) • Food Adulteration: Common food adulterants, detection and safe limits. 	15
Unit II	<p>Food Service management:</p> <ul style="list-style-type: none"> • Classification of food service operations Recent trends in food service Systems . Types of food service systems Menu Planning ,Types of Menus Menu presentation, Writing, Design and format Menu Marketing • Storage and Inventory Production: Recipe formulation, Kitchen Design and Layout. Styles of service and Service management. • Food Handling and prevention of food borne illness. 	15

	<ul style="list-style-type: none"> Personal Hygiene and Environmental Sanitation Waste disposal, pest control, Standards for food safety and sanitation Human Resource Management- Recruitment and Selection process Training and Development Performance Appraisal, Leadership and Motivation. 	
Unit III	<p>EXERCISE PHYSIOLOGY:</p> <p>Body composition and sports performance</p> <p>i. An overview of human body composition</p> <p>ii. Factors influencing body composition-age, sex, etc.with special emphasis on exercise.</p> <p>Muscle physiology and skeletal fitness</p> <p>i. Types of muscle exercise- endurance, resistance and flexibility; and their effect on the composition and strength of muscle.</p> <p>ii. Effect of training on muscle</p> <p>iii. Muscle and bone injury during exercise.</p> <p>Cardiovascular & pulmonary response to exercise</p> <p>i. Physiology of cardiovascular system</p> <p>ii. Effect of aerobic and anaerobic exercise training on pulmonary and cardiovascular fitness.</p> <p>iii. Role of exercise in the diseases of CV & pulmonary system</p> <p>Suitable exercise programme for special conditions; therapeutic conditions, Weight reduction and Weight Management .</p>	15

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC605	Information Technology: M-commerce, Interactive Computer Graphic, Multimedia System	45	4
<ul style="list-style-type: none"> To understand the advanced know-how in Information Technology. 			

Unit I	<p>Computer Graphics-</p> <ul style="list-style-type: none"> Introduction to Image and Objects, Bitmap and Vector-Based Graphics, Applications of Computer Graphics, Display Devices, Cathode Ray Tubes, Raster Scan Display, Random-Scan Display, Flat Panel Display, Input Technology, Coordinate System Overview, Introduction to 2D and 3D Graphics, Key-Frame Animation, Construction of an Animation Sequence, Motion Control Methods, Procedural Animation, Key-Frame Animation vs. Procedural Animation, Introduction to Morphing, Three-Dimensional Morphing 	15
Unit II	<p>Multimedia:</p> <ul style="list-style-type: none"> Introduction, scope of multimedia. Applications of multimedia, Hardware and software requirements, multimedia database, Analog representation, waves, digital representation, need for digital representation, A to D conversion, D to A conversion, relation between sampling rate and bit depth, Quantization error, 	15

	<ul style="list-style-type: none"> Types of text, Font, insertion, compression, File formats. Types of images, colour models, Basic steps for image processing, principle and working of scanner and digital camera 	
Unit III	M-Commerce : <ul style="list-style-type: none"> Introduction – Infrastructure Of M– Commerce – Types Of Mobile Commerce Services. Technologies Of Wireless Business – Benefits And Limitations, Support, Mobile Marketing & Advertisement, Non– Internet Applications In M– Commerce – Wireless/Wired Commerce Comparisons 	15

Semester VI : Practicals

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC6P1	<p style="text-align: center;">Practical - I Based on USHSC6P1 BASED ON USHSC601 & USHSC 602</p>	03 / Week	02
<ol style="list-style-type: none"> Estimate Dissolved Oxygen in the given sample of water Estimate amount of Free CO₂ in the given sample of water Estimate amount of Hardness in the given sample of water Demonstration of flame Photometer: Potassium or Sodium Study of Various Air Pollution Control Devices: Catalytic converter, Gravity settling chamber, Electrostatic precipitators and Fabric filters. Study of safety symbols Study of Personal Protective Equipment and Non Respiratory Personal Protective Equipments. Identification of type of panic disorder and mood disorder and treatment plan Case studies regarding abnormality. Application of major theories of counseling in a counseling set up. Visit to a rehabilitation centre and report writing 			

Course Code	Course Title and Contents	Lectures	Credit Points
USHSC6P2	<p style="text-align: center;">PRACTICAL-II BASED ON USHSC603 & USHSC 604</p>	03 / Week	02
<ol style="list-style-type: none"> TLC method for differentiation of ink, drugs Microscopic examination of <ol style="list-style-type: none"> Hair Fibre Pollen Study of analytical instruments in crime investigation <ol style="list-style-type: none"> HPLC, 			

- b. GC-MS
 - c. UV-visible Spectrophotometer
 - d. TLC
 - e. Electrophoresis (Horizontal/ Vertical)
4. Formulating a recipe . Indian Menu, Continental Menu, Oriental Menu.
 5. Study of preparation and presentation of : soups, snacks
 3. Study of Preparation and Presentation of : Sandwiches, Salads, Mocktails.
 4. Table Setting and Service Flower Arrangement Napkin Folding Fruit and Vegetable Carving
 5. Measure density of milk using lactometer.
 6. Identification of types of exercises; (Bench press, Jumps, Push ups, Sit and Reach Test); fitness Muscle strength, endurance and flexibility exercises.
 7. Suitable exercise programme for special conditions Weight reduction and Weight Management
 8. Suitable Exercise programme for therapeutic conditions-CVD/ Diabetes /Arthritis.
 9. Case Analysis from theory and investigative point of view – Nithari Killings, Arushi murder case, Nirbhaya case.

PRACTICAL EXAMINATION**T.Y.B.Sc. Semester- IV**

Code : USHSC6P1

Duration: 3 Hrs

Total Marks : 100

Q. I	Major Experiment	30 Marks
	Estimate the amount of Dissolved Oxygen in the given sample of water	
	OR	
	Estimate the amount of Free CO ₂ and Total Hardness from the given sample of water	
Q. II	Minor Experiment	20 Marks
	Two case studies on clinical psychology	
Q. III	Identify and describe three from each group	30 Marks
	a. Safety symbols	
	b. Pollution devices (3 from each group)	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION**T. Y. B. Sc. Semester- IV**

Code : USHSC6P2

Duration: 3 Hrs

Total Marks : 100

Q. I	Major experiment	30 Marks
	TLC method for differentiation of ink, drugs	
	OR	
	Mounting for Microscopic examination of	

	Hair and Pollen Hair and Fibre	
Q. II	Minor experiment	20 Marks
	1. Menu Planning and Napkin Folding	
	OR	
	1. Flower Arrangement and Napkin Folding	
Q. III	Identify and describe	30 Marks
	a. Instruments in crime investigation b. Identification of types of exercises. c. Identification of lactometer	
Q. IV	Viva Voce	10 Marks
Q. V	Journal	10 Marks

PRACTICAL EXAMINATION
T. Y. B. Sc. Semester- VI
Code : USHSC6P3

Duration: 3 Hrs

Total Marks : 100

Evaluation to be done during practical examination

Q. I	Two case studies to be performed during examination	80
	Marks distribution for each case study	
	1. Identifying the topic on which the case study is based Forensic science and Clinical psychology.	15
	2. Report submission, Presentation and Viva Voce	25
Q. II	Report of Excursion Field report/ Institutional visit	20

Semester End Examination - Undergraduate Programmes of T.Y.B.Sc Human Science .

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.

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

Time: 2½ Hrs.

Maximum Marks: 75

Instructions:

1. All questions are compulsory.

Q1. Based on unit I (20marks)

A) 7 marks OR A) 7 marks

B) 8 marks OR B) 8 marks

C) Attempt any one of the following --5 marks

a, b

Q2. Based on unit 2 (20marks)

A) 7 marks OR A) 7 marks

B) 8 marks OR B) 8 marks

C) Attempt any one of the following --5 marks

a, b

Q3. Based on unit 3 (20marks)

A) 7 marks OR A) 7 marks

B) 8 marks OR B) 8 marks

C) Attempt any one of the following --5 marks

a, b

Q4 Mixed question attempt any three (15 marks)

a & b unit 1

c & d unit 2

e & f unit 3