

**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**HISTORICAL PERSPECTIVES OF PSYCHOLOGY**

**Q.P. Code: 1931**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Discuss the contribution of Freud to psychotherapy. Or	15
1b. Explain Jung's views on personality and its functioning.	
2a. Bring out the salient features of Drive and Incentive theories. Or	15
2b. Discuss operant conditioning and its therapeutic applications.	
3a. Explain and evaluate ERG theory. Or	15
3b. Delineate Rogarian perceptives to personality.	
4a. Discuss social learning theory. Or	15
4b. Discuss briefly indigenous perspectives to therapy	
<b>Write short notes on any Four of the following</b>	<b>4 X 5 = 20</b>
5. Ego defense mechanisms.	
6. Trigona.	
7. Personal construct.	
8. Need hierarchy.	
9. Cognitive balance.	
10. Self from Buddhist perspective.	

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**THIRD SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**ORGANIZATIONAL BEHAVIOUR**

**Q.P. Code: 1941**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Elaborate on the importance and fundamental assumptions of organizational behavior.	
Or	15
1b. Explain ethical behaviors in organizations.	
2a. Explain the nature and measurement of personality in the organization	
Or	15
2b. What are the abilities and skills needed in an organization? Explain	
3a. Define Decision making in organizations. Explain Models of Decision making.	
Or	15
3b. Elaborate on the techniques to improve the effectiveness of decisions in an organization.	
4a. Discuss leadership behavior.	
Or	15
4b. Describe the nature and characteristics of organizational culture.	

**Write short notes on any Four of the following**

**4 X 5 = 20**

5. Organizational behavior to Technology.
6. Corporate social responsibility.
7. Reducing stress in the organization.
8. Group Decision.
9. Path-goal theory.
10. Creating an organizational culture.

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**FIRST SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**MICROBIOLOGY**

**Q.P. Code: 1541**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. Explain fermentation technology. Write different parts and functions of fermenter.
2. Explain sterilization and media preparation methods in microbiology.
3. Discuss types of vaccines and their importance in disease control.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. What are antibiotics? Explain the role of antibiotics.
5. Give a detail account of hybridoma technology for production of monoclonal antibodies.
6. Write a note on food borne diseases and their control measures.
7. Describe different types of culture media.
8. What are zoonotic diseases? Explain one example.
9. What are bioreactors, explain importance of aeration and agitation in fermenters.
10. Explain sterilization and disinfection in microbiology.

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**THIRD SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**VIROLOGY & VACCINOLOGY**

**Q.P. Code: 1547**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS (Answer Any TWO):</b>	<b>2 X 15 = 30</b>
1. a) Explain the mechanisms of host cell damage.	(10)
b) Give an account on vaccines for adults.	(5)
2. Write mechanism of endocytic, non-endocytic and clathrin mediated virus entry into host cell.	
3. a) Discuss the importance of therapeutic human monoclonal antibodies.	(12)
b) Add a note on adjuvants.	(3)
<b>SHORT ESSAY QUESTIONS (Answer any FIVE):</b>	<b>5 X 10 = 50</b>
4. Explain the structure of virus.	
5. a) Explain virus-host cell interaction.	(8)
b) Add a note on cytokines.	(2)
6. Give an account on vaccine immunology.	
7. a) Explain the cellular receptors for virus entry.	(8)
b) Define bacteriophage? Add a note on its structure.	(2)
8. Write in detail about virus isolation using cell culture and chick embryo technique.	
9. What are monoclonal and polyclonal antibodies? Write medical/therapeutic uses of monoclonal antibodies.	
10. a) Write importance of vaccines in virus infection control.	
b) Discuss the structure and mode of HIV infection.	

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**FIRST SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**RESEARCH METHODS (QUALITATIVE & QUANTITATIVE)**

**Q.P. Code:1801**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Discuss design, conduction & analysis of a case-control study. (5+5+5)
2. Write about data documentation and management of any research in detail.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Non-randomized control trials.
4. Explain grounded theory.
5. Before and after without control design.
6. What are the various steps in developing a research plan?
7. Write in detail about in-depth interviews.

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**THIRD SEMESTER - MASTER OF PUBLIC HEALTH  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PLANNING AND MANEGEMENT**

**Q.P. Code:1807**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Explain health-planning cycle with an example.
2. How Ottawa charter helps in promotion of health. Discuss with an example.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Define needs assessment. What are the steps to conduct needs assessment in public health?
4. Discuss on modern management techniques.
5. Explain audit cycle with example.
6. Discuss on inventory control in management.
7. Role of formal and informal organizations in health sector.

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**FIRST SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – I: PRINCIPLES OF MANAGEMENT & MANAGERIAL SKILLS**

**Q.P. Code: 1701**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**4 X 15 = 60**

1. Explain the different types of organization structure followed by hospitals.
2. Define decision making. Explain the decision making process in an organization.
3. What is the contribution of classical school of management?
4. Write a note on employee centered management.

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10 = 20**

5. Types of plans.
6. Delegation of authority.
7. Presentation skills.
8. Managerial skills.

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**THIRD SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – I: HEALTH MANAGEMENT INFORMATION SYSTEM & MATERIAL  
MANAGEMENT IN HEALTHCARE**

**Q.P. Code: 1707**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**4 X 15 = 60**

1. Explain the health information system at district, state & national level.
2. Explain the steps involved in purchase of capital equipment.
3. What are functions of a stores department? Explain the setting up of a store.
4. Describe the purchase cycle.

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10 = 20**

5. Importance of information technology.
6. Duties of a store manager.
7. Quality control in materials management.
8. Disposal of condemned materials.

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**HUMAN PHYSIOLOGY AND NUTRITION SCIENCE**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

**Use separate answer books for Section A and Section B**

**SECTION A : HUMAN PHYSIOLOGY Q.P. CODE : 1951 [35 Marks]**

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>1 X 15 = 15</b>
1. Name the hormones secreted from pancreatic gland. Describe the actions of insulin. List the features of diabetes mellitus.	(3+8+4)
<b>SHORT ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
2. Composition and functions of gastric juice.	(5+5)
3. Define erythropoiesis. Describe the stages of erythropoiesis.	(3+7)

**SECTION B : NUTRITION SCIENCE...Q.P. CODE : 1952 [45 Marks]**

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>1 X 15 = 15</b>
1. a) Explain the classification and the nutritional importance of proteins.	(10)
b) Write a note on nitrogen balance in the body.	(5)
<b>SHORT ESSAY QUESTIONS:</b>	<b>3 X 10 = 30</b>
2. Describe the role of dietary fibres in health.	
3. Write a note on Fluorosis.	
4. Use of RDA in planning balanced diets.	

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**THIRD SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**FOOD SERVICE MANAGEMENT**

**Q.P. Code: 1958**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. What are the qualities of a leader? How can a manager establish good relations with her/his employees and customers in a food service unit? (10+5)
2. What is menu planning? Explain the types of menus and the skills required for menu planning. (5+10)

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Personal hygiene in food service units.
4. Criteria in selecting manpower for a food service unit.
5. Quality control in food preparation and cooking.
6. Resources needed for a food service establishment.
7. Qualities necessary for efficient purchasing.

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**FIRST SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER I: ANATOMY**

**Q.P. Code: 1401**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
1. Name the different types of cartilage giving examples for each. Describe in detail microscopic structure of elastic cartilage.	(5+5)
2. Define a neuron and draw a neat labeled diagram. How is the myelin sheath produced and what is its function?	(5+5)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
3. Name and draw the various cells of connective tissue.	
4. Describe a typical synovial joint with the aid of a diagram.	
5. Describe the process of spermatogenesis.	
6. Microscopic structure of transverse section of bone.	
7. Microscopic structure of palatine tonsil.	
8. Write a note on primitive streak.	
9. Draw and describe the types of simple epithelium with example and function.	
10. Write the difference between cardiac and skeletal muscles.	
11. Write the differences between thick and thin skin.	
<b>SHORT ANSWER QUESTIONS:</b>	<b>5 X 3 = 15</b>
12. Name the structures present in the umbilical cord.	
13. Draw a neat labeled diagram of Graffian follicle.	
14. Name the phases of cell division.	
15. Mention <b>three</b> functions of Adipose tissue.	
16. Name the layers present in epidermis of thick skin.	

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**THIRD SEMESTER - M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER I: BIOCHEMISTRY  
(Enzymology and Biology of Free Radicals and Antioxidants)**

**Q.P. Code: 1411**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**20 X 2 = 40**

- |    |   |     |
|----|---|-----|
| 1. | a) Describe feedback enzyme inhibition with examples.       | (6) |
|    | b) Describe enzymes used as cardiac markers.                | (4) |
|    | c) Describe co-enzymes derived from B complex vitamins.     | (6) |
|    | d) Describe covalent modifications of enzymes.              | (4) |
| 2. | a) Describe Michaelis-Menten constant and its significance. | (8) |
|    | b) What is Non-competitive enzyme inhibition?               | (2) |
|    | c) Describe factors affecting enzyme activity.              | (8) |
|    | d) What are immobilized enzymes?                            | (2) |

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

- Describe enzyme profile in liver diseases.
- Define free radical. Describe sources of different free radicals.
- Explain specificity of enzymes. Write a note on uses of enzymes as laboratory reagents.
- Describe mechanism of enzyme action.
- Define anti-oxidant. Describe preventive anti-oxidants.
- Describe isoenzymes of clinical significance.

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**THIRD SEMESTER - M.Sc. MEDICAL IN MICROBIOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER I: MICROBIOLOGY  
(General Bacteriology)**

**Q.P. Code: 1413**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 20 = 40</b>
1. Describe bacterial growth curve. Describe bacterial growth requirements. Add a note on bacterial counts.	(10+5+5)
2. Define sterilization and disinfection. Describe disinfectants in detail. Add a note on bacterial filters.	(5+10+5)
<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
3. Contributions of Loius Pasteur.	
4. Fimbria.	
5. Transport media.	
6. Anaerobic culture techniques.	
7. Dark ground microscope.	
8. Transduction.	

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**FIFTH SEMESTER - M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER I: BIOCHEMISTRY  
(Molecular Biology & Techniques)**

**Q.P. Code: 1427**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Describe the Watson and Crick model of DNA structure. Describe the mechanism of DNA replication in eukaryotes. (10+10)
2. Explain different types of mutations with examples. Add a note on Ames test. List the different mutation detection techniques and explain any one.

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Explain the concept of Lac operon in regulation of gene expression.
4. What is gene therapy? What are the vectors used in gene therapy. Name the disorders which have been successfully treated by gene therapy.
5. List the salient features of genetic code and describe the wobble hypothesis.
6. Explain the types, structure and functions of different RNAs.
7. Describe the steps involved in Polymerase chain reaction. Add a note on design of primers with mention of its application in designing a nucleic acid test for diagnosing COVID 19.
8. Describe the human genome project.

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**FIFTH SEMESTER - M.Sc. MEDICAL IN MICROBIOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER I: MICROBIOLOGY  
(General Virology)**

**Q.P. Code: 1429**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 20 = 40</b>
1. Describe the classification, morphology, pathogenesis and laboratory diagnosis of infections caused by herpes viruses. (3+3+4+10)	
2. Discuss the pathogenesis and laboratory diagnosis of Dengue fever.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
3. Discuss the laboratory diagnosis of HIV infection.	
4. Describe the laboratory diagnosis of Rabies. Give a brief note on its immunoprophylaxis.	
5. Discuss the slow viral diseases and write their laboratory diagnosis.	
6. Describe the structures and functions of Bacteriophage add a note on its applications in disease diagnosis.	
7. Describe morphology and laboratory diagnosis of Hepatitis B virus.	
8. Enumerate oncogenic viruses. Add a note on the role of herpes viruses in oncogenesis.	

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**FIRST SEMESTER - M.Sc. BIostatistics  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**BASIC MATHEMATICS AND STATISTICS**

**Q.P. Code: 1601**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 40**

1. Describe Newton's methods of Interpolation, with a suitable example.
2. Define statistics and data types with their utility in health management, with a suitable example.
3. Describe the measures of central tendency with suitable examples.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Describe the measures of dispersion briefly.
5. Write a short note on the histogram.
6. Write a short note on the measure of location.
7. Define the odds ratio and write its 95% confidence interval.
8. Write a short note on frequency polygon.
9. Write a short note on the scatter plot.
10. Write a short note on Simpson's One-third rule.

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**THIRD SEMESTER - M.Sc. BIostatistics  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**DESIGN OF EXPERIMENTS**

**Q.P. Code: 1609**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 40**

1. Describe randomized block design along with its advantage and disadvantage.
2. Describe the advantages of replication, randomization and local control.
3. What is the difference between Randomized Block Design (RBD) and Latin Square Design? Describe the statistical analysis of RBD for one observation per experimental unit.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Define basic principles of the design of experiments.
5. Describe the main objectives of randomization.
6. Define the meaning of  $2^3$ -factorial experiment.
7. Describe the layout of the Latin Square Design (LSD).
8. Define experiment, treatments and experimental unit briefly.
9. Describe the efficiency of a design.
10. What do you mean by blocks and yield in the design of experiments?

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**M.Sc. ECHOCARDIOGRAPHY-I SEMESTER  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – I  
BASICS OF ECHOCARDIOGRAM**

**Q.P. Code: 1301**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Discuss morphologic characteristics of cardiac chambers, valves and great arteries.
2. Discuss basic principles of ultrasound and its clinical applications.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Write a note on transducers used in echocardiography.
4. Discuss the basic views of 2D echo.
5. Write a note on echo assessment of situs.
6. Write a note on echo assessment of LV function.
7. Discuss speckle tracking echocardiography.

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**M.Sc. PERFUSION TECHNOLOGY-I SEMESTER  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – I  
BASICS OF PERFUSION TECHNOLOGY**

**Q.P. Code: 1303**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Write an essay on ideal blood pump.
2. How will you set up occlusive setting? Write down Hazards of over or under occlusion.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Describe in details about biomedical waste management.
4. Lillehei.
5. Complications of cardioplegia.
6. Reperfusion injury & controlled reperfusion.
7. Write short essay on cardioplegia delivery system

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**M.Sc. PERFUSION TECHNOLOGY  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – I  
BASICS OF PERFUSION TECHNOLOGY**

**Q.P. Code: 1158**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Write a note on evolution of oxygenators. Explain difference between conventional and modified filtration techniques.
2. Draw a diagrammatic presentation of extrinsic and intrinsic coagulation pathway and explain mechanism of action heparin.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Explain your understanding in relation with blood flow using Poisseuille's law.
4. Write a note on antiarrhythmic drugs.
5. Explain about evolution of cardioplegic solutions, their delivery.
6. Write a note on bronchodilators & mucolytics.
7. What are the different plasma expanders and oxygen carrying solutions?  
What are the indications of oxygen carrying solutions?

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**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**COGNITIVE PSYCHOLOGY**

**Q.P. Code: 1932**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Define cognitive psychology. Briefly describe the nature of cognitive psychology.	
Or	15
1b. Discuss current areas of research in cognitive psychology.	
2a. Elaborate on the models of attention.	
Or	15
2b. Describe attention and human brain.	
3a. What is Consciousness? Discuss consciousness of mental health process.	
Or	15
3b. Discuss different types of memory.	
4a. Define Psycholinguistics. Evaluate the Chomsky theory.	
Or	15
4b. Discuss the steps in problem solving.	

**Write short notes on any Four of the following**

**4 X 5 = 20**

5. Goals of research in cognitive psychology.
6. Attention and PET.
7. Function of consciousness.
8. Characteristics of language.
9. Artificial intelligence.
10. Meta-cognitive strategies.

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**THIRD SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PSYCHOPATHOLOGY**

**Q.P. Code: 1942**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. What is Mental Health? Give an outline of the Psychoanalytical approach. Or	15
1b. Explain DSM of mental disorders.	
2a. Describe causes and clinical features of generalized anxiety disorder. Or	15
2b. Explain the causes and clinical features of PTSD.	
3a. Explain the causes and clinical features of depressive disorders. Or	15
3b. Describe Delusional disorders.	
4a. What are the clinical features and causes of hypochondriac disorders? Explain. Or	15
4b. Explain the Causes and clinical features of Pervasive developmental disorders.	
<b>Write short notes on any Four of the following</b>	<b>4 X 5 = 20</b>

5. Current views on Mental Health.
6. Phobic disorder.
7. Manic disorder.
8. Antisocial Personality Disorder.
9. Autism.
10. Alcohol abuse.

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**FIRST SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**GENETICS AND MOLECULAR BIOLOGY**

**Q.P. Code: 1542**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. Explain DNA recombination in detail.
2. Write a note on DNA replication and role different enzymes in DNA replication process.
3. Explain central dogma of Eukaryotic genome.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. Write a note on genetic code. Explain.
5. Describe experiments which proved that DNA is genetic material.
6. Explain in detail types of mutation and aberrations.
7. Explain micro-RNA and their uses in therapeutics.
8. Describe rolling circular model of DNA replication with neat labelled diagram.
9. Give a note on DNA replication models.
10. What is RNA? Write a note on RNA splicing.

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**THIRD SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**INTELLECTUAL PROPERTY RIGHTS**

**Q.P. Code: 1548**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

- |  |      |
|--|------|
| 1. a) Principles of patent law.                            | (5)  |
| b) Explain industrial design treaties.                     | (10) |
| 2. a) Describe the procedure for patent transfer.          | (7)  |
| b) Write a short notes on                                  | (8)  |
| i) Types of intellectual property rights.                  |      |
| ii) Authorship of copyright.                               |      |
| 3. a) Explain the difference between patent and copyright. | (10) |
| b) Duration of registration for patent and copyright.      | (5)  |

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

- Write an account on trademarks infringement.
- What is patent transfer? Explain the process of patent transfer.
- Write a note on international treaties and industrial design.
- What is invention? How to patent an innovation.
- What is revocation and surrender of patents?
- What are basic principles of patent law? Explain.
- How to write a scientific article? Explain steps involve in writing.

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**FIRST SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**BIO-ETHICS**

**Q.P. Code: 1802**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 15 = 30</b>
1. What is bio-ethics? Explain why it is important to understand ethics in research.	(3+12)
2. Discuss in detail about ethical committee.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 10 = 50</b>
3. Discuss on Belmont report.	
4. What are the International conference on harmonization (ICH) – good clinical practice (GCP) guidelines.	
5. What do you mean by essential documents? What essential documents are needed to conduct clinical trials?	(2+8)
6. What are the ICMR guidelines for clinical trials?	
7. Role & duties of sponsor.	

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**THIRD SEMESTER - MASTER OF PUBLIC HEALTH  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PUBLIC HEALTH LEGISLATION AND PUBLIC HEALTH  
INFORMATION SYSTEMS**

**Q.P. Code: 1808**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. What is the scope of The Factories Act, 1948? Discuss the Factories Act 1948 in detail. (3+12)
2. Enumerate legislations related to safety & protection of environment. Describe the various treatment modalities of bio-medical waste generated in a district hospital according to biomedical waste management & handling rules 1998. (5+10)

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Write about evolution of health information system. Add a note on its principles. (5+5)
4. Universal declaration of human rights.
5. Welfare of parents & senior citizens Act 2007.
6. The medical termination of pregnancy act 1971.
7. Write about COTPA and comment on its implementation in India.

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**FIRST SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – II: ORGANISATION BEHAVIOUR AND  
PRINCIPLES OF COMMUNICATION**

**Q.P. Code: 1702**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**4 X 15 = 60**

1. Describe the determinants and theories of personality.
2. Describe the different techniques of organizational development.
3. Write a note on quality of work life and discuss the reasons for growing importance of quality of work life.
4. Explain the role of oral communication and its various forms in an organization.

**SHORT ESSAY QUESTIONS (Answer Any TWO):**

**2 X 10 = 20**

5. Principles of communication.
6. Barriers of communication.
7. Conflict management.
8. Latest changes in organizational behavior.

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**THIRD SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – II: FINANCIAL MANAGEMENT, COST ACCOUNTING & MANAGEMENT  
ACCOUNTING, PRINCIPLE OF ACCOUNTING**

**Q.P. Code: 1708**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**4 X 15 = 60**

1. Define the term budget. What are the different types of budgets? What are the benefits of budgets?
2. State the objectives of the financial management. Explain the scope of the finance function.
3. Explain the concept of cost centers. What are the different types of cost centers?
4. Discuss operation of bank accounts and bank reconciliation regards to hospital.

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10 = 20**

5. Role of costing in control of cost.
6. Management accounting.
7. Financial statements.
8. What are the factors influencing capital structure decisions.

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**RESEARCH METHODOLOGY & BIostatISTICS**

**Q.P. Code: 1953**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Classify study designs. Write in detail about case control study with its application in nutrition field. (3+12)
2. What are the uses of Biostatistics? Write in brief about probability & nonprobability sampling methods. (5+10)

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Explain the steps involved in framing a research hypothesis.
4. Define Bias. What are the varieties of bias which may arise in epidemiological studies?
5. What do you mean by Data? Write in brief about organization of data.
6. How a focus group discussion is conducted?
7. Write in brief about non randomized control trials.

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**THIRD SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**THERAPEUTIC NUTRITION-I**

**Q.P. Code: 1959**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Explain the need and types of special feeding methods. What is the role of a dietitian in patient care? (10+5)
2. Rima is 45 years, height 5'-1" and weight-90kgs what is Rimas's BMI? Explain the dietary management to help Rima lose weight.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Lactose intolerance.
4. Inflation and food shortage.
5. Nutritional care plan for a patient recovering from TB.
6. Low-residue diet.
7. Food allergens and their management.

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**FIRST SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER II: PHYSIOLOGY**

**Q.P. Code: 1402**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
1. Name the respiratory centers. Describe the neural regulation of respiration.	(2+8)
2. Define cardiac output and stroke volume. Describe the factors regulating cardiac output.	(2+8)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
3. Define homeostasis. Explain positive and negative feedback with <b>one</b> example.	
4. Explain erythroblastosis foetalis. Add a note on its prevention.	
5. Explain oxygen dissociation curve. Write the factors shifting the curve to right side.	
6. Describe the functions of surfactant.	
7. Explain the long term regulation of blood pressure.	
8. List the properties of skeletal muscle. Explain refractory period in detail.	
9. Define and classify immunity. Explain mechanism of cell mediated immunity.	
10. Describe the transmission of impulse across neuro muscular junction.	
11. Describe secondary active transport with examples.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 3 = 15</b>
12. Draw and label waves of ECG.	
13. Enumerate functions of platelet.	
14. What is functional residual capacity? Write its importance.	
15. Saltatory conduction.	
16. Define jaundice. Write its types.	

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**THIRD SEMESTER - M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER II: BIOCHEMISTRY  
(Nutrition)**

**Q.P. Code: 1412**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 20 = 40</b>
1. a) Write the sources, RDA and functions of calcium.	(6)
b) What is normal serum calcium level in the body? Explain the regulation of serum calcium level.	(8)
c) Substantiate vitamin D as a hormone.	(6)
2. a) Write the sources, RDA, functions and deficiency manifestations of vitamin-A	(6)
b) Write a note on hemochromatosis.	(4)
c) Write the functions and deficiency manifestations of niacin and riboflavin.	(10)
<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
3. Explain Folate trap and add a note on folate antagonists.	
4. With a neat labeled diagram explain absorption, transport and storage form of iron. Add a note on iron deficiency disorders.	
5. Mention the role of dietary fibres and its importance.	
6. What is complete protein? Explain the nutritional importance of proteins.	
7. Write the sources, RDA, functions and deficiency manifestations of vitamin C.	
8. Write a note on Mediterranean diet.	

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**THIRD SEMESTER - M.Sc. MEDICAL IN MICROBIOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER II: MICROBIOLOGY  
(Immunology)**

**Q.P. Code: 1414**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Enumerate antigen-antibody reactions. Describe in detail about the principle, types and applications of ELISA. (5+15)
2. Define and classify hypersensitivity. Describe in detail Type IV hypersensitivity. (3+5+12)

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Incomplete antigens.
4. IgM.
5. Mechanism of autoimmunity.
6. Bacterial toxins.
7. Humoral immunity.
8. Prophylactic immunization.

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**FIFTH SEMESTER - M.Sc. MEDICAL IN BIOCHEMISTRY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER II: BIOCHEMISTRY  
(Application of Bio-informatics & Nanotechnology)**

**Q.P. Code: 1428**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 20 = 40**

1. Describe the functions, regulation and metabolism of thyroid hormones. Enumerate the laboratory tests to assess thyroid function. Add a note on causes, symptoms and diagnostic test interpretation for hypothyroidism. (9+4+7)
2. Classify jaundice. Enumerate the causes and laboratory investigations for jaundice. Explain Van den berg test for bilirubin. Describe the interpretation of serum and urine tests in different types of jaundice. (3+6+4+7)

**SHORT ESSAY QUESTIONS:**

**6 X 10 = 60**

3. Explain the structure of hemoglobin molecule. Mention the types of hemoglobin with their percentage in adults. Explain the significance of fetal hemoglobin in fetal life.
4. List the plasma proteins and immunoglobulins. Mention their functions. Add a note on acute phase proteins. (3+4+3)
5. Explain the diagnostic tests in disorders of adrenal gland.
6. Explain the roles of the following signal molecules-a) Adiponectin b) TNF (5+5)
7. Explain the diagram normal serum protein electrophoretic pattern. Also mention the different pattern observed in multiple myeloma, Nephrotic syndrome, chronic liver diseases and its diagnostic significance.
8. Outline the mechanism of cellular and humoral immunity.

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**FIFTH SEMESTER - M.Sc. MEDICAL IN MICROBIOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 100

**PAPER II: MICROBIOLOGY  
(Mycology)**

**Q.P. Code: 1430**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 20 = 40</b>
1. Describe the morphology, pathogenesis and laboratory diagnosis of infections caused by candida species.	(4+4+12)
2. Enumerate the fungi causing opportunistic infections. Describe the morphology and pathogenesis of Aspergillus species. Add a note on laboratory diagnosis of Aspergillosis.	(3+4+3+10)
<b>SHORT ESSAY QUESTIONS:</b>	<b>6 X 10 = 60</b>
3. Describe the etiology, pathogenesis and laboratory diagnosis of mucormycosis.	
4. Classify Dermatophytes. Add a note on laboratory diagnosis of Dermatophytosis.	
5. Discuss the pathogenesis and laboratory diagnosis of superficial fungal infections.	
6. List the antifungal agents. Describe antifungal susceptibility tests.	
7. Describe the etiology, pathogenesis and laboratory diagnosis of Sporotrichosis.	
8. Enumerate dimorphic fungi. Discuss the etiology and laboratory diagnosis of Histoplasmosis.	

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**FIRST SEMESTER - M.Sc. BIostatistics**  
**DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PROBABILITY THEORY**

**Q.P. Code: 1602**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 20**

1. Define probability and types of probability with suitable examples. What do you mean by the additive, multiplicative and conditional theorem of probability?
2. The probability that a 60 year old man will live up to 70 is 0.73 and the probability that a 50 year old woman will live up to 60 is 0.80. what is the probability that a man who is 60 and his wife who is 50, will:
  - a) Both be alive 10 years
  - b) Only one of them be alive for 10 years.
3. Describe Bay's Theorem with an example. In a certain town, there are an equal number of male and female residents. It is known that 5% of females and 20% of males are unemployed. If any unemployed person is picked-up at random. What is the probability that:
  - a) It is male.
  - b) It is female.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Describe the difference between discrete and continuous random variables.
5. Describe the properties of additive and multiplicative theorem of expectation.
6. Define the central limit theorem.
7. Describe discrete uniform distribution.
8. Describe Poisson distribution with their probability mass function.
9. Define probability generating function.
10. Describe bivariate normal distribution with their probability density function.

**THIRD SEMESTER - M.Sc. BIostatISTICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**NON-PARAMETRIC TESTS**

**Q.P. Code: 1610**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 20**

1. Explain the difference between parametric and non-parametric tests. Define order statistics and derive  $r^{\text{th}}$  order statistics for the exponential distribution.
2. Describe the chi-square test with a suitable example.
3. Describe the Wilcoxon-Mann-Whitney test with a suitable example.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Define the McNamar test with a suitable example.
5. Define Fisher's exact test with a suitable example.
6. Define Spearman's Rank correlation with a suitable example.
7. Define Wilcoxon sign test with a suitable example.
8. Describe the median test.
9. Explain the difference between the chi-square test and the McNamar test.
10. Describe the situation to use the Kruskal-Wallis test with suitable example.

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**M.Sc. ECHOCARDIOGRAPHY-I SEMESTER  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – II  
BASICS OF CVS AND PATIENT EVALUATION**

**Q.P. Code: 1302**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Describe in brief about development of interatrial septum and classification of ASD.
2. Discuss cardiac cycle.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Discuss fetal circulation.
4. Discuss chest X-ray in Dextracardia.
5. Describe ECG in acute myocardial infarction.
6. Discuss ECG in Bradyarrhythmias.
7. Discuss ECG in Tachyarrhythmias.

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**M.Sc. PERFUSION TECHNOLOGY-I SEMESTER  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – II  
PHARMACOLOGY RELATED TO PERFUSION TECHNOLOGY**

**Q.P. Code: 1304**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 15 = 30</b>
1. Classify antihypertensive and describe mechanism of action of these drugs.	
2. Write an essay on role of corticosteroids in cardiac surgery.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 10 = 50</b>
3. Priming solutions-principles and types.	
4. Antiplatelet & lipid lowering drugs.	
5. Medical management of cardiac failure.	
6. Write an essay on antiarrhythmic drugs and their use in cardiac surgery.	
7. Write short note on Thrombolytics and Antithrombolytics.	

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**M.Sc. PERFUSION TECHNOLOGY  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – II  
PERFUSION TECHNOLOGY FOR COMMON CONDITIONS**

**Q.P. Code: 1159**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Explain about:
  - a) Prebypass checklist.
  - b) Monitoring on bypass
  - c) Checklist at termination of pump.
2. Describe blood conservation techniques, blood group cross matching and management of mismatched blood transfusion.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Anticoagulation alternatives on bypass.
4. Classify diuretics and add a note of Mannitol.
5. Myocardial protection: non cardioplegic protection.
6. Anaesthetic drugs commonly used on bypass.
7. Add a note on prevention of microemboli on cardiopulmonary bypass.

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**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**BIOPSYCHOLOGY**

**Q.P. Code: 1933**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Write an essay on structure and functions of central nervous system. Or	15
1b. Explain the nature and scope of biopsychology.	
2a. Explain the communication process between neurons. Or	15
2b. Describe briefly neurological disorders.	
3a. Explain the nature and functions of chromosomes. Or	15
3b. Elucidate the hereditary determinants of behavior.	
4a. Critically examine the influence of environment on human behavior. Or	15
4b. Discuss the adverse effects of psychotropic medications.	

**Write short notes on any Four of the following**

**4 X 5 = 20**

5. Recording techniques.
6. Synopsis.
7. Instincts.
8. Eugenics.
9. Principles of evolution.
10. Mood stabilizers.

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**THIRD SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PSYCHOLOGICAL THERAPIES**

**Q.P. Code: 1943**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Define Psychotherapy. What are the professional issues in Psychotherapy? Explain.	
Or	15
1b. Give an outline of Psychotherapy in India.	
2a. Evaluate psychoanalytical therapies.	
Or	15
2b. Elaborate on the current status and evaluation of Neo Freudian approaches.	
3a. Describe Gestalt therapy.	
Or	15
3b. Discuss the need and applications of Family therapy.	
4a. Explain Cognitive Behaviour Therapy.	
Or	15
4b. Evaluate the difference between therapeutic and community health models.	
<b>Write short notes on any Four of the following</b>	<b>4 X 5 = 20</b>
5. Ethical issues in intervention.	
6. Brief dynamic therapies.	
7. Therapy based on work of Beck.	
8. Nature of Group therapy.	
9. Rehabilitation.	
10. Crisis Intervention.	

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**FIRST SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**BIOCHEMISTRY**

**Q.P. Code: 1543**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. Give a detail account on 'Krebs cycle'.
2. Explain different techniques employed in purification of enzymes.
3. Write a note on techniques classification of amino acids.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. Write a note factors affecting enzymes activity.
5. Give a note on cholesterol biosynthesis.
6. Explain urea cycle.
7. Explain pentose phosphate pathway.
8. Write a note on Glycogenesis and Cori cycle.
9. Give a detailed account on nomenclature of enzymes.
10. Explain biosynthesis and significance of phosphoglycerides.

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**THIRD SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**MOLECULAR IMMUNOLOGY**

**Q.P. Code: 1549/A**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. Define immunity? Explain causes for hypersensitivity.
2. Explain major histocompatibility complex cells.
3. Discuss biological significance of cytokines.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. What are monoclonal antibodies? Explain.
5. Explain significance of different types of immune cells.
6. What is graft rejection? Explain.
7. Explain radio-immuno assay.
8. Explain the role of cell mediated immune response.
9. What is autoimmunity? Explain HLA system.
10. What are vaccines? Explain live attenuated vaccines.

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**THIRD SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**INDUSTRIAL BIOTECHNOLOGY**

**Q.P. Code: 1549/B**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. a) Explain the economics and scale of microbial product fermentations. (12)  
b) Write a note on antifoaming agents. (3)
2. a) Describe the constituents of typical media for fermentations. (10)  
b) Give an account of Fed batch system. (5)
3. a) Write an account of sterilization of the fermenter. (10)  
b) Discuss the mechanism of alcohol fermentation. (5)

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. a) Explain the framework for kinetic models. (5)  
b) Discuss the control of incubation during fermentations. (5)
5. Describe the isolation of industrially important microorganisms.
6. a) Discuss the design of batch sterilization processes. (5)  
b) Give an account on population models. (5)
7. Explain the microbial production of Gluconic acid.
8. a) Explain a typical fermenter with different parts and working model.  
b) What are antifoams? Explain their role in fermenter control.
9. Explain production of Beer.
10. a) Explain preservation of industrially important microorganisms.  
b) Explain production of "Vinegar".

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**FIRST SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
MASTER OF PUBLIC HEALTH IN EPIDEMIOLOGY  
MASTER OF PUBLIC HEALTH IN HEALTH ECONOMICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**HEALTH CARE DELIVERY SYSTEM**

**Q.P. Code:1803**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Enumerate various National Health programmes. Describe the salient features of NHM programme.
2. Define Primary Health Care. Describe principles and elements of Primary Health Care.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. List health programs related to mother child health. Critically evaluate RMNCH.
4. Who can be an Anganwadi worker? What is her role in ICDS?
5. Discuss the challenges in prevention and control of malaria in rural & urban areas and give strategies to overcome these challenges.
6. What is the role of private and government health sector in health promotion?
7. Explain DOTS strategy. Add a note on NIKSHAY.

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**THIRD SEMESTER - MASTER OF PUBLIC HEALTH (RS 2)  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES**

**Q.P. Code:1809**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Classify occupational health hazards. Describe general measures to prevent occupational hazards.
2. Write in detail about biomedical waste management rules amended in 2016.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Discuss on accidents in industries. Add a note on its preventive methods.
4. Enumerate water purification methods. Explain slow sand filter method.
5. Role of an individual in prevention of pollution.
6. Describe the diagnosis and preventive measures of lead poisoning.
7. Write in brief about integrated vector control methods.

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**FIRST SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – III: STATISTICS, RESEARCH METHODOLOGY  
& QUANTITATIVE TECHNIQUES**

**Q.P. Code: 1703**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**4 X 15 = 60**

1. Bring out the importance of review of literature as a source of research problem. Briefly explain how to conduct a literature review during a research.
2. Write a note on: a) Hypothesis b) Chi-square test
3. a) What are the characteristics and functions of a research report?  
b) Give an account of the contents of a research report.
4. Explain: a) Queuing theory b) Simulation

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10 = 20**

5. Write a note on time series.
6. Game theory.
7. Charts used in data presentation.
8. Secondary data collection.

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**THIRD SEMESTER - MASTER OF HOSPITAL ADMINISTRATION  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – III:  
MANAGEMENT OF HUMAN RESOURCES AND INDUSTRIAL RELATIONS**

**Q.P. Code: 1709**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**4 X 15 = 60**

1. Define industrial relations. List the objectives of industrial relations.  
Describe the conditions essential for good industrial relations.
2. Describe the manpower planning process in a hospital.
3. Discuss interview and orientation in detail.
4. What is medical malpractice? Discuss with examples.

**SHORT ESSAY QUESTIONS (Answer any TWO):**

**2 X 10 = 20**

5. Provident fund act.
6. Discipline and disciplinary action.
7. Job evaluation.
8. Breach of contract.

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**ADVANCED HUMAN NUTRITION**

**Q.P. Code: 1954**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 15 = 30</b>
1. a) How does preconceptional nutrition affect foetal development?	(5)
b) Explain the nutritional requirements and the management of dietary problems and complications in expectant mothers.	(10)
2. a) Explain the effect of the process of aging on the nutrition of the elderly.	(10)
b) Role of physical activity, drugs and supplements in elderly.	(5)
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 10 = 50</b>
3. Define Weaning. Explain in detail about weaning of infants.	(3+7)
4. Need for good nutrition during adolescence.	
5. Nutrition related problems of preschoolers.	
6. Nutritional and food requirements of lactating women.	
7. Write in brief about the diet related problems of school children.	

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**THIRD SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**COMMUNITY NUTRITION**

**Q.P. Code: 1960**

Answers should be specific to the Questions asked.

Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. a) What are the highlights of the revised population policy of India?  
b) Describe the effect of population growth on the quality of life of people.
2. a) How does nutrition education help in the eradication of malnutrition? (5)  
b) Explain the methods and teaching aids used in nutrition education programmes. (10)

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Enumerate the common methods used to assess dietary intakes.
4. Briefly write on nutritional monitoring and its current programmes.
5. Write about food security programmes.
6. Implications of vital statistics in population growth.
7. Write about strategies initiated by the Government to combat public nutrition problems.

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**FIRST SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER III: BIOCHEMISTRY**

**Q.P. Code: 1403**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
1. Discuss the various levels of structural organization of protein. Describe the structure and functional significance of insulin.	(4+6)
2. Describe the sources, co enzyme form, biochemical functions, and recommended daily allowance and deficiency manifestations of Thiamine.	(1+1+3+1+4)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
3. Define active transport. Explain the different types of active transport with examples.	
4. Define lipids. Classify lipids with suitable examples.	
5. Describe the clover leaf model of t-RNA using a neat labelled diagram.	
6. Classify enzymes based on IUBMB system. Give <b>two</b> examples for each enzyme class.	
7. Describe the functions and deficiency manifestations of vitamin A.	
8. Describe the salient features of Watson and Crick model of DNA using a neat labeled diagram.	
9. Define lipoproteins. Classify them and explain their functions.	(1+2+2)
10. Define Carbohydrates. Classify carbohydrates with suitable examples.	
11. Describe the Fluid mosaic model of cell membrane with the help of a diagram.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 3 = 15</b>
12. Define Acid, Base and Buffer.	
13. Define Coenzymes with <b>two</b> examples.	
14. Name <b>three</b> Antioxidant vitamins.	
15. Define Phospholipids. Give examples.	
16. Define nucleosides & nucleotides and mention <b>one</b> example for each.	

**FIRST SEMESTER - M.Sc. BIostatistics  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**SAMPLING TECHNIQUES AND DESIGNS**

**Q.P. Code: 1603**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 40**

1. What is the minimum required sample size? Write the formula for sample size in prevalence studies and intervention studies or comparison of two groups.
2. Describe the case-control study along with its advantages and disadvantages. What are the selection criteria for case and control?
3. Describe the cluster sampling techniques along with the limitations of simple random sampling.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Define sampling techniques along with uses of sampling.
5. Describe the probability and non-probability sampling briefly.
6. Define optimum allocation with a suitable example.
7. Describe the systematic sampling techniques with an example.
8. Write short notes on Quota Sampling and Snowball Sampling techniques.
9. What is the difference between Sampling and Non-Sampling errors?
10. Write short notes on prospective study design.

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**THIRD SEMESTER - M.Sc. BIostatistics  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**EPIDEMIOLOGICAL AND RESEARCH METHODOLOGY**

**Q.P. Code: 1611**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All the questions are compulsory.

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 40**

1. Describe the cohort study and its advantages and disadvantages. Define risk ratio and the meaning of  $RR=1$ ,  $RR>1$  and  $RR<1$ .
2. Describe in detail the step-by-step procedure for thesis writing.
3. What is the minimum required sample size? Write the formula for sample size in prevalence studies and intervention studies or comparison of two groups.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Write the formula for relative risk and its confidence interval.
5. Write steps in the formulation of research objectives.
6. How to validate the data collection tool (questionnaire)?
7. Describe the importance of sample size and the minimum required sample size.
8. Define FINER in thesis writing with suitable examples.
9. Write the formula for sample size in prevalence studies and intervention studies or comparison of two groups.
10. Describe the systematic sampling techniques with an example.

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**M.Sc. PERFUSION TECHNOLOGY  
EXAMINATION – FEBRUARY 2023**

**Time: 3 Hours**

**Max. Marks: 80**

**PAPER – III  
PERFUSION TECHNOLOGY SPECIAL SITUATION AND  
RECENT ADVANCES**

**Q.P. Code: 1160**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.  
All questions are compulsory.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Explain regarding ventricular assist devices and their management.
2. Compare VA & VV ECMO.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Contraindications for IABP.
4. Management of oxygenator failure.
5. Indicators of malfunctioning.
6. Endoaortic cross clamp.
7. Cannulation strategies in minimal access cardiac surgery.

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**THIRD SEMESTER - MASTER OF HOSPITAL ADMINISTRATION (OS Batch)  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**PAPER – III:  
HOSPITAL FINANCE COST AND MANAGEMENT ACCOUNTING**

**Q.P. Code: 1709/C**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>4 X 15 = 60</b>
1. Discuss the term budget. Enumerate the salient and distinguishing features of operating and capital budget. Add a note on budgetary control?	(2+10+3)
2. Discuss the term cost. Explain the role and function of interpretation of accounting data in managing a tertiary care hospital. Add a note on income and non-income generating cost centres?	(2+8+5)
3. Discuss the term pricing. Explain the role and function of pricing policy in providing affordable health-care in tertiary care hospital with suitable examples. Add a note on factors influencing cost and pricing policy?	(2+9+4)
4. Discuss the term investment and depreciation. Enumerate the role and function of profit and loss statement in managing a tertiary care hospital	(5+10)
<b>SHORT ESSAY QUESTIONS (Answer any TWO):</b>	<b>2 X 10 = 20</b>
5. Internal control and internal auditing.	
6. Cost and cost centre in a tertiary care hospital.	
7. Principles of accounting.	
8. Health care maintains organization (HMO).	

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**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**RESEARCH METHODS**

**Q.P. Code: 1934**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Define research. Elucidate steps involved in research process. Or	15
1b. What is variable? Explain types of variables with examples.	
2a. Define probability. Explain normal probability curve and its applications. Or	15
2b. Differentiate between parametric and non-parametric statistics.	
3a. Discuss the types of probability sampling. Or	15
3b. Explain the types, merits and demerits of method of observation.	
4a. Elucidate the salient features of Quasi experimental design. Or	15
4b. Describe a correlation research design with an example.	

**Write short notes on any Four of the following**

**4 X 5 = 20**

5. Types of hypothesis.
6. Schedules.
7. Selection of sample size.
8. Longitudinal research.
9. Cross sectional design.
10. Contents of a good report.

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**THIRD SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**POSITIVE PSYCHOLOGY**

**Q.P. Code: 1944**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Give an outline of the role of positive emotions in Positive Psychology. Or	15
1b. Evaluate the status of Positive Psychology in India.	
2a. Define happiness. Discuss gender differences in happiness. Or	15
2b. Elaborate the happiness across cultures.	
3a. Discuss Love and belongingness. Or	15
3b. Elaborate on the relationship between forgiveness and altruism.	
4a. "To maintain subjective well-being religion and spirituality are very important". Justify this statement. Or	15
4b. Explain the relationship between Trauma and Subjective Well-being.	
<b>Write short notes on any Four of the following</b>	<b>4 X 5 = 20</b>
5. Eastern views on positive psychology and its application.	
6. Determinants of Happiness.	
7. Love and Kindness.	
8. Virtues and Work.	
9. Resilience.	
10. Gratitude.	

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**THIRD SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**CANCER BIOLOGY & THERAPEUTICS**

**Q.P. Code: 1550/A**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. a) Discuss the historical perspective of cancers.  
b) Classify the various types of anticancer drugs.
2. a) Describe the various phenotypic alterations in cancer cells.  
b) Explain the approach of using antibiotics for cancer therapy.
3. What is drug delivery system? Explain oral drug delivery systems.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. Explain the changes in cell membranes in cancers.
5. Explain the role of immunosuppressants during cancer therapy.
6. What are Liposomes? Explain the role of liposomes.
7. Add a note on monoclonal antibodies in targeted delivery.
8. Describe the characteristics of malignant cells during cancers.
9. Explain nano emulsions as a specialized drug delivery system.
10. Discuss the role of genetics in cancers.

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**THIRD SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**ENVIROMENTAL BIOTECHNOLOGY**

**Q.P. Code: 1550/B**

Answers should be specific to the Questions asked.  
Draw neat, labeled diagrams wherever necessary.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS (Answer Any TWO):**

**2 X 15 = 30**

1. a) Explain various types of non-renewable sources of energy.  
b) Explain the effect of coal as conventional fuel on environment.
2. a) Explain the mechanism of toxic chemical degradation by microorganisms.  
b) Describe the degradation of petroleum products by microorganisms.
3. a) Describe the primary treatment of domestic waste.  
b) Discuss the importance of asymbiotic nitrogen fixing bacteria in soil enrichment.

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 10 = 50**

4. Explain the importance of oxidation ponds in sewage treatment.
5. Discuss the importance of algal biofertilizers in soil fertility.
6. Discuss the environmental significance of genetically modified microbes.
7. Explain Bio-assessment of environmental quality.
8. Describe the importance of VAM as biofertilizers.
9. Discuss the impact of heavy metal pollution on environment.
10. Describe the importance of anaerobic sludge digestion in waste management.

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**FIRST SEMESTER - M.Sc. BIostatistics  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**METHODS IN STATISTICAL INFERENCE**

**Q.P. Code: 1604**

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All the questions are compulsory.

**LONG ESSAY QUESTIONS (Answer any TWO):**

**2 X 20 = 40**

1. Write the steps for testing the equality of two means of two univariate normal distributions and 95% confidence interval for two means in t-test.
2. Write the steps of F-test for the equality of two variances and the relationship between population variance and sample variance.
3. Define the Chi-square test along with steps for testing the hypothesis. What is the degree of freedom of the Chi-square test?

**SHORT ESSAY QUESTIONS (Answer any FIVE):**

**5 X 8 = 40**

4. Explain the Type-II error, power of test, 95% confidence interval and p-value.
5. State null and alternative hypothesis to test two mean and proportion.
6. What is the area within  $x \pm SD$ ,  $x \pm 2SD$  and  $x \pm 3SD$ ?
7. Write the difference between the t-test and Z-test.
8. What do you mean by point estimate and standard error of an estimate in statistics?
9. Write the use of central limit theorem.
10. Write the hypothesis for the test of a single variance along with test statistic.

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**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – FEBRUARY 2023**

Time: 3 Hours

Max. Marks: 80

**INTRODUCTION TO PSYCHOLOGY**

**Q.P. Code: 1935**

Answers should be specific to the Questions asked.  
Draw neat & labeled diagrams wherever necessary.  
All the questions are compulsory.

<b>Question Number</b>	<b>Marks</b>
1a. Define psychology and explain various branches of psychology. Or	15
1b. Explain the structure and function of central nervous system.	
2a. What is sensation? Describe types of sensation. Or	15
2b. What is attention? Explain various kinds of attention.	
3a. What is learning? Elucidate theories of learning. Or	15
3b. What is memory? Explain types of memory.	
4a. Define intelligence. Elucidate different types of intelligence tests. Or	15
4b. What is personality? Discuss types of personality.	

**Write short notes on any Four of the following**

**4 X 5 = 20**

5. Scope of psychology.
6. Characteristics of perception.
7. Measurements of attention.
8. Kinds of illusion.
9. Transfer of training.
10. Causes of forgetting.

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