

**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – MARCH 2024**

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. Elaborate on Freudians psychoanalytic theory of personality with therapeutic applications.		
	Or	15
1b. Explain Alfred Adler's approach to personality and its therapeutic applications.		
2a. Explain Operant conditioning of learning with its therapeutic applications.		
	Or	15
2b. Elaborate on Miller and Dollard theory of personality.		
3a. Elucidate theory of needs by McClellan and its applications.		
	Or	15
3b. Discuss Maslow's theory of motives with therapeutic applications.		
4a. Discuss Existential approach in special context of psychopathology.		
	Or	15
4b. Discuss social learning theory of Bandura.		
<b>Write short notes on any Four of the following</b>		<b>4 X 5 = 20</b>
5. Freudian approach to motivation.		
6. Classical conditioning.		
7. Karen Horney approach to personality.		
8. Upanishad's.		
9. Therapeutic applications of Yoga and Meditation.		
10. Kelly's personal construct approach.		

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**FIRST SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – MARCH 2024**

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. Briefly explain the germ theory of disease.
2. Explain Salmonellosis and causes and control measures.
3. Explain Fransisco Reddys Swan Necked flask experiments.

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

**5 X 10 = 50**

4. What is innate and adaptive immunity
5. Explain contributions of Antonie van Leeuwenhoek
6. Explain the contributions made by Louis Pasteur in the development of Microbiology
7. Explain importnce of Antibiotics
8. Explain Hospital borne infections and add a note on its control measures
9. What are New Vaccines? Explain advancements in vaccine technology
10. Write a note on upstream and downstream processing

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – MARCH 2024**

Time: 3 Hours

Max. Marks: 80

**HUMAN PHYSIOLOGY**

**Q.P. Code: 1951**

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 is the uniqueness of heart? Briefly describe the Cardiac Cycle.
2. Name the enzymes secreted by small intestine. Discuss the digestion of food in the small intestine.

(5+10)

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Explain the process of urine formation.
4. Explain the pathophysiology of Hypertension. Discuss the factors affecting blood pressure.
5. Explain the structure and functions of the stomach.
6. What do you understand by the term "Endocrine Glands"? Enlist the endocrine glands present in human body. Describe the functions of thyroid gland.
7. Explain the temperature regulation of body.

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**FIRST SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
MARCH 2024**

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. Define and classify joints. Discuss the components of the synovial joints with examples	
2. Classify the skeletal muscle based on its shape with examples. Describe the structure of Sarcomere.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
3. Explain the Microscopic structure of palatine tonsil.	
4. Describe the events occurring during fertilization.	
5. Explain the Microscopic structure of peripheral nerve. (T.S.)	
6. Describe the types of cartilaginous joints with examples.	
7. Describe the functions of skin and name its appendages.	
8. Describe the blood supply of long bone.	
9. Mention the differences between thick and thin skin with neat labeled diagram.	
10. Describe the structure of neuron with a neat labeled diagram.	
11. Describe the steps of oogenesis.	
<b>SHORT ANSWER QUESTIONS:</b>	<b>5 X 3 = 15</b>
12. Mention the changes of spermiogenesis.	
13. Draw diagram of microscopic structure cardiac muscle.	
14. Classify the lymphoid organs and name them.	
15. Draw and label parts of a Blastocyst.	
16. Enumerate the types of neuron with examples.	

**M.Sc. ECHOCARDIOGRAPHY-I SEMESTER  
EXAMINATION – MARCH 2024**

**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. Describe various views of echocardiographic examination and segments of left ventricle.
2. Describe in detail about the transducers in echocardiography. Add a note on normal variants in 2D echo.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Pulse repetition frequency
4. Clinical application of doppler echocardiography
5. Pulse wave and Continuous wave Doppler frequency
6. A mode & B mode
7. M- mode echocardiography

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**M.Sc. PERFUSION TECHNOLOGY-I SEMESTER  
EXAMINATION – MARCH 2024**

**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 the long essay on cardio-pulmonary resuscitation.
2. Compare pulsatile and non-pulsatile perfusion.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Write the short essay on Autoclave.
4. Gibbon.
5. Poiseuilles law.
6. Write short notes on – a) Spallation b) Filtration.
7. Write the short essay on operating room set up in relation with zoning concept and laminar flow.

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**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
DEGREE EXAMINATION – MARCH 2024**

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.	What is cognitive psychology? Explain the current areas of research in cognitive psychology.	
	Or	15
1b.	What is attention? Explain theories of attention.	
2a.	Define Consciousness and explain its functions.	
	Or	15
2b.	What is memory? Explain any three models of memory.	
3a.	Describe origin of Language. Explain the concepts of semantics and syntax.	
	Or	15
3b.	What is problem solving? Discuss obstacles and aids of problem solving.	
4a.	Write an essay on Meta-cognitive strategies.	
	Or	15
4b.	Explain architecture and function of human brain.	

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

**4 X 5 = 20**

5. Types of Memory.
6. Research methods in cognitive psychology.
7. Pragmatics.
8. Characteristics of Language.
9. Artificial Intelligence.
10. Frontal lobe circuits.

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**FIRST SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – MARCH 2024**

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. What are multiple alleles? Explain ABO blood typing in humans.
2. What are post transcription modifications? Explain the major post transcription modifications in eukaryotes.
3. Explain the process of initiation of DNA replication in eukaryotes.

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

**5 X 10 = 50**

4. What are post translational modifications? Explain phosphorylation
5. Define Tryptophan (Trp) Operon. Explain the process of Tryptophan (Trp) Operon
6. What is epigenetic? Explain the mechanisms of epigenetic
7. What is microRNA? Explain the uses of in therapeutics.
8. What are chromosomal aberrations? Explain deletions and Inversions
9. What are non-Coding RNAs. Narrate their importance in physiology
10. What are stop codons. Explain the significance of stop codons

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – MARCH 2024**

Time: 3 Hours

Max. Marks: 80

**NUTRITION SCIENCE**

**Q.P. Code: 1952**

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. Classify proteins. Write the functions and briefly explain the process of digestion of proteins in our body.	
2. What are electrolytes? Explain their key functions and distribution in our body.	(5+10)
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 10 = 50</b>
3. Explain role of thiamin, niacin, Folate in our body.	
4. Define BMR. Explain the factors affecting BMR. How do you calculate BMR?	
5. Write the functions of Vitamin A. Explain Role of vitamin A in vision.	
6. Discuss the role of carbohydrates, proteins, water and electrolytes in the diet of a sports person.	
7. Briefly explain the role of ergogenic aids in sports performance. Justify your answer with appropriate examples.	

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**FIRST SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
MARCH 2024**

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. Define blood pressure with normal value. Describe short term regulation of blood pressure.	(3+7)
2. Name the muscles of respiration. Describe the mechanism of respiration.	(3+7)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
3. Describe the composition and functions of surfactant.	
4. Define homeostasis. Explain positive feedback mechanism with one example.	
5. Describe excitation contraction coupling in skeletal muscle.	
6. Describe pathophysiology and features of Erythroblastosis foetalis.	
7. Define jaundice. Tabulate the differences of the types of jaundice.	
8. Describe properties of skeletal muscle.	
9. Classify body fluid compartments with normal values. Explain the measurement of ECF volume.	
10. Describe the conducting system of heart.	
11. Name the plasma proteins with their functions.	
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 3 = 15</b>
12. Define Primary active transport with one example.	
13. Draw neat labelled diagram of Sarcomere.	
14. Distinguish between Adult and Fetal Hemoglobin.	
15. Define dead space air with normal value.	
16. Name the muscle proteins with functions.	

**M.Sc. ECHOCARDIOGRAPHY-I SEMESTER  
EXAMINATION – MARCH 2024**

**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 the cardiac cycle. Add a note on Frank-Starling Law.
2. Compare the hemodynamic changes between pulmonary and systemic circulation. Add a note on the blood supply of heart.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Chest X ray findings in acyanotic congenital heart diseases.
4. ECG in RVH & LVH.
5. Normal chest X ray reading.
6. Normal intracardiac and vascular pressures.
7. ECG findings in cyanotic congenital heart diseases.

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**M.Sc. PERFUSION TECHNOLOGY-I SEMESTER  
EXAMINATION – MARCH 2024**

**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.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Describe in details about types and principles of cardioplegia drugs.
2. Write the long essay on use of a)Plasma expanders b)Antiangial drugs.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Write an essay on pulmonary vasodilators.
4. Write the short note on pharmacotherapy of
  - a) Bronchial asthma
  - b) Cough
5. Role of pharmacotherapy as cerebral protection during DHCA.
6. Beta agonist and Beta antagonist drugs.
7. Write an essay on
  - a) Sedatives muscle relaxants.
  - b) Oxygen carrying solutions.

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**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
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**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. Discuss the various methods of studying brain. Or	15
1b. Write an essay on central Nervous system and its functions.	
2a. Explain various Endocrine glands in body with actions of their hormones. Or	15
2b. Explain categories and functions of Neurotransmitters.	
3a. Discuss various Neurological disorders. Or	15
3b. What is Behavior Genetics? Explain nature and scope of Behavior Genetics.	
4a. Explain current researches in Evolutionary biopsychology. Or	15
4b. Elaborate on Ethical issues in Psychopharmacology.	

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

**4 X 5 = 20**

5. Chromosomal functions.
6. Genetic Engineering.
7. Instincts.
8. Eugenics.
9. Principles of Psychopharmacology.
10. Determination of Human Behavior.

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**FIRST SEMESTER – M.Sc. IN BIOTECHNOLOGY  
DEGREE EXAMINATION – MARCH 2024**

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. Enumerate Krebs cycle and explain the terms
2. Give an account of electron transport chain.
3. Explain the scope of biochemistry in the field of Medicine, Agricultural, and forensic.

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

**5 X 10 = 50**

4. Define glycogenesis. Explain the pathway of Define glycogenesis
5. Explain electron transport chain and its significance in ATP Synthase.
6. What is rolling circle model DNA replication? Explain
7. Explain the importance of Heat Shock proteins.
8. What DNA replication. Explain the Semi conservative type of DNA replication.
9. Define the role of coding and non coding RNAs
10. Define methylation of DNA.

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – MARCH 2024**

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.

<b>Question Number</b>	<b>Marks</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 15 = 30</b>
1. Classify epidemiological study designs. Explain cross sectional study design .	
2. Differentiate parametric and non- parametric test. Explain any one non parametric test.	(5+10)
<b>SHORT ESSAY QUESTIONS:</b>	<b>5 X 10 = 50</b>
3. Discuss briefly indepth interview method.	
4. What is research hypothesis? Write types of hypothesis and explain.	
5. Explain bar graph.	
6. Explain about standard deviation	
7. Define variable. Write different types of variable	

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**FIRST SEMESTER - M.Sc. MEDICAL DEGREE EXAMINATION  
MARCH 2024**

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.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 10 = 20**

1. Define amino acids. Describe the classification of amino acids based on structure and nutritional importance. (1+5+4)
2. Describe the sources, requirements, biochemical functions and deficiency manifestations of Folic acid. (2+2+3+3)

**SHORT ESSAY QUESTIONS:**

**9 X 5 = 45**

3. Describe the different types of Ion channels with examples.
4. Define lipids. Classify lipids with suitable examples.
5. Describe the clover leaf model of t-RNA using a neat labeled diagram.
6. Describe the causes and clinical manifestations of Scurvy.
7. Explain the level of organization of a protein. Illustrate with example.
8. Define lipoproteins. Classify them and explain their functions. (1+2+2)
9. Define mucopolysaccharides. Name any three and explain their biological significance. (1+2+2)
10. Describe the Fluid mosaic model of cell membrane with the help of a diagram.
11. Classify enzymes based on IUBMB system. Give two examples for each enzyme class.

**SHORT ESSAY QUESTIONS:**

**5 X 3 = 15**

12. Define Coenzymes. Give TWO examples.
13. Name THREE biologically important peptides.
14. Draw a neat labeled diagram of mitochondria.
15. Define Phospholipids. Give examples.
16. Define Nucleosides and give suitable examples.

**FIRST SEMESTER - M.Sc. PSYCHOLOGY  
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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. What is research? Elucidate various steps in research process. Or	15
1b. Elaborate on science and scientific methods.	
2a. What is research problem? Discuss source and selection criteria of research problem. Or	15
2b. What is hypothesis? Explain different types of hypothesis.	
3a. Define Sampling Design. Explain the Non-probability sampling methods. Or	15
3b. Delineate Questionnaire and Interview methods of data collection.	
4a. Explain Quasi experimental designs. Or	15
4b. Discuss experimental Research designs.	

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

**4 X 5 = 20**

5. Variables.
6. Normal Probability Curve.
7. Probability sampling methods.
8. Schedules.
9. Ethical issues in research.
10. Report writing.

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**FIRST SEMESTER - M.Sc. NUTRITION AND DIETETICS  
DEGREE EXAMINATION – MARCH 2024**

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.

**Question Number**

**Marks**

**LONG ESSAY QUESTIONS:**

**2 X 15 = 30**

1. Write a detailed note on advantages of exclusive breast feeding over artificial feeding. Explain in detail the reasons for increase nutritional requirements during infancy.
2. Explain in detail the role of hormones during lactation.

**SHORT ESSAY QUESTIONS:**

**5 X 10 = 50**

3. Write a brief note on Food Security in India. (3+7)
4. Write the RDA for all nutrients of preschooler. Plan energy and protein rich snack for a preschooler.
5. Explain the effects of vitamin A deficiency and plan vitamin A rich snack for a preschooler.
6. Explain the effects of iron deficiency and plan iron rich snack for an adolescent.
7. Write the RDA for pregnant women. Plan iron rich snack for an anemic pregnant women.

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