

ATAL BIHARI VAJPAYEE MEDICAL UNIVERSITY, UTTAR PRADESH

BACHELOR OF PHYSIOTHERAPY (B.P.T)

FIRST SEMESTER EXAMINATION - MARCH 2025

Time: 3 Hours

Max Marks: 80 Marks

BIOPHYSICS

PAPER CODE: 2531110104

General instructions:

- All questions are compulsory.
- Explain with diagrams where required.
- Please write the correct paper code.
- Any attempt to use unfair means will result in disqualification.

LONG ESSAY QUESTIONS

2 X 20 = 40 Marks

- Q.1** Describe about the production and properties, interaction mechanism of radiofrequency and microwaves with biological systems.

ATTEMPT ANY ONE FROM QUESTION NO 2A AND 2B

- Q.2A** Explain in detail about common electrical components such as transistors, valves, capacitors, transformers with diagram.
- Q.2B** Describe about the optical properties of skin along with acute and chronic effect of sunlight on skin.

SHORT NOTE QUESTIONS

2 X 10 = 20 Marks

- Q.3** Explain about the laws of electricity & electromagnetic spectrum.
- Q.4** Explain about the Photoactivation of biological systems, Photodynamic therapy and mechanism of photodynamic action on cells.

SHORT ANSWER QUESTIONS

5 X 4 = 20 Marks

- Q.5** Explain potential of nerve and resting membrane potential.
- Q.6** Explain about biphasic and compound action potential.
- Q.7** Explain about visible and IR sources.
- Q.8** What are thermal and non-thermal effects on whole body?
- Q.9** What are principle and theory of thermography?
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Max Marks: 80 Marks

HEALTH PSYCHOLOGY
PAPER CODE: 2531110105

General instructions:

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LONG ESSAY QUESTIONS

2 X 20 = 40 Marks

- Q.1** Describe about the Counselling and its Principles and Types of counselling. Mention the principles and techniques of counselling special children and their family members.
- Q.2** Explain types of attention and determinants of attention. Mention the Gestalt principles of organization of perception and factors influencing perception.

SHORT NOTE QUESTIONS

2 X 10 = 20 Marks

- Q.3** Explain about different types of leaders and different theoretical approaches to leadership.
- Q.4** Explain about the theories of intelligence and assessment of intelligence.

SHORT ANSWER QUESTIONS

5 X 4 = 20 Marks

- Q.5** Define behaviourism and Psychoanalysis.
- Q.6** What is stress and management of stress.
- Q.7** Explain different stages of development.
- Q.8** What are true knowledge and inaccurate knowledge?
- Q.9** What are rules in problem solving?
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Time: 3 Hours

Max Marks: 80 Marks

BIOCHEMISTRY
PAPER CODE: 2531110103

General instructions:

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LONG ESSAY QUESTIONS

2 X 20 = 40 Marks

- Q.1** Describe about the definition, classification, general functions and metabolism of Proteins.
- Q.2** Definition, classification and functions, dietary source, daily requirement and deficiency disorders of Vitamins.

SHORT NOTE QUESTIONS

2 X 10 = 20 Marks

- Q.3** Explain about the contractile elements in muscle, briefly on the process of muscle contraction and energy for muscle contraction.
- Q.4** Explain about the hemoglobin and myoglobin with their functions.

SHORT ANSWER QUESTIONS

5 X 4 = 20 Marks

- Q.5** Define and explain RDA and BMR.
- Q.6** Explain about glycolysis.
- Q.7** Explain about Urea cycle and its significance.
- Q.8** What is function of cell membrane?
- Q.9** What are renal function tests?
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Time: 3 Hours

Max Marks: 80 Marks

Human Anatomy-I (Including Applied Anatomy)

PAPER CODE: 2531110101

General instructions:

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LONG ESSAY QUESTIONS

2 X 20 = 40 Marks

- Q.1** Describe about the Position, shape, size, features, blood supply and nerve supply of the male and female reproductive system.
- Q.2** Describe about the Origin, insertion, nerve supply and action, openings in the diaphragm and how it helps in respiration along with diagram.

SHORT NOTE QUESTIONS

2 X 10 = 20 Marks

- Q.3** Explain about Composition & functions, classification and types according to Morphology and development of bones.
- Q.4** Explain about the muscles, nerves, blood vessels of front of arm.

SHORT ANSWER QUESTIONS

5 X 4 = 20 Marks

- Q.5** Define and explain radioulnar joint.
- Q.6** Explain about Deformities of hand.
- Q.7** Location, size, shape and features of Adrenal glands.
- Q.8** Applied anatomy of Abdominal Hernia.
- Q.9** What is Superficial & deep fascia?
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Time: 3 Hours

Max Marks: 80 Marks

Human Physiology -I (Including Applied Physiology)

PAPER CODE: 2531110102

General instructions:

- All questions are compulsory.
- Explain with diagrams where required.
- Please write the correct paper code.
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LONG ESSAY QUESTIONS

2 X 20 = 40 Marks

- Q.1** Describe about the Conducting system of heart including Components, Impulse conduction, cardiac cycle and Phases of cardiac cycle.
- Q.2** Define and classify the respiration along with respiratory muscles. Explain about the regulation of respiration.

SHORT NOTE QUESTIONS

2 X 10 = 20 Marks

- Q.3** Explain about Plasma and its Composition, formation, functions.
- Q.4** Explain about Classification of Nerve injury along with degeneration and regeneration.

SHORT ANSWER QUESTIONS

5 X 4 = 20 Marks

- Q.5** Define Body fluids with its composition.
- Q.6** Explain about Cell Organelles and their functions.
- Q.7** Explain about autonomic nervous system.
- Q.8** What is Cardiac Output?
- Q.9** What are effects and types of hypoxia?
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