

QP Code: 123004

Reg. No.:.....

**First Professional BHMS Degree Supplementary Examinations
November 2024**

Human Physiology and Biochemistry (Hom UG - PB) – Paper 1

(2022 Scheme)

Time: 3 Hours

Total marks:100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

1. Multiple Choice Questions

(10x1=10)

The Answers to MCQ questions (Q.No. i to Q.No. x) shall be written continuously on the first two writing sheets (ie Page No. 3 & 4) only

- Protein synthesis occurs in:
a) Smooth endoplasmic reticulum b) Golgi bodies
c) lysosomes d) Rough endoplasmic reticulum
- Plasma membrane is formed mainly by:
a) Cholesterol b) Phospholipid
c) Carbohydrate d) Protein
- The normal pH of blood is
a) 7.38 – 7.42 b) 6 to 7
c) More than 7.45 d) Less than 7.35
- One of the following statements is not true with regard to action potential
a) It is a graded potential
b) It is conducted over the surface of excited cell
c) It is produced by threshold stimulus
d) It is associated with a repolarization phase caused by outward movement of potassium ions
- Life span of neutrophils in circulation is:
a) 6 hours b) 6 days
c) 10 days d) 15 days
- Speed of conduction is slowest in:
a) AV node b) Bundle of His
c) Purkinje fibers d) ventricular myocardial fibers.
- Function of surfactant in lungs starts at:
a) 28 weeks b) 32 weeks
c) 34 weeks d) 36 weeks
- Aldosterone increases absorption of sodium from which part of renal tubules
a) Distal convoluted tubule and collecting duct
b) Proximal convoluted tubule
c) Ascending limb of loop of Henle
d) Descending limb of loop of Henle
- Which layer of the epidermis contains melanocytes:
a) Basal layers of epidermis b) stratum lucidum
c) stratum corneum d) stratum granulosum
- Unidirectional flow of nerve impulse is at:
a) Synapse b) Axon
c) Dendrites d) All of the above

(PTO)

Short Answer Questions**(8x5=40)**

2. Describe the structure and functions of mitochondria.
3. Define buffer. Describe various buffer systems in the human body.
4. List the important indications for blood transfusion. Describe erythroblastosis fetalis.
5. Explain excitability as a property of cardiac muscles.
6. Define surfactant and explain the functional significance of lung surfactant.
7. Explain micturition reflex.
8. Explain the regulation of body temperature through skin.
9. Define and classify neurons.

Long Answer Questions**(5x10=50)**

10. A 12 years old boy complains of generalized weakness for past 4 months. Physical examination revealed pallor. Routine blood investigation showed Hb – 9 gm% & peripheral smear revealed microcytic hypochromic RBS's
 - a) Identify the clinical condition.
 - b) Write a note on the morphological classification of anemia with examples.
 - c) Explain the stages of erythropoiesis and factors regulating the process (1+3+6)
11. Define immunity. Write about the major differences between Innate Immunity and Acquired Immunity. Explain the mechanism of cell mediated immunity. (1+2+7)
12. Describe the normal electro cardio gram with its waves and intervals. Write a note on Unipolar chest leads. (8+2)
13. Explain the uptake of oxygen in the lungs and its transport in the blood. Add a note on Hemoglobin-Oxygen dissociation curve and its shift. (6+4)
14. Describe the structure of renal corpuscle. Explain the myogenic theory and tubule glomerular feedback mechanism in the regulation of glomerular filtration. (4+6)
