

QP CODE : .....

Reg.No.....

## First Professional B.H.M.S Regular Examination, Model Question Paper

### HUMAN PHYSIOLOGY & BIOCHEMISTRY(Hom UG-PB) - PAPER I (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 diagrams wherever necessary.*

#### 1.MULTIPLE CHOICE QUESTION (10 X 1 = 10)

The answers to MCQ (Q.NO.1 to 10) shall be written continuously on the first two writing sheets (ie Page No.3& 4)only

i.Degradation of worn out organelles is done by

- a) Mitochondrion
- b) Peroxisomes
- c) Centrioles
- d) Rough Endoplasmic Reticulum

ii.Cell Junctions which forms selective barrier for molecules

- a) Tight Junction
- b) Gap Junction
- c) Adherens Junction
- d) Desmosome

iii. Hemoglobin shows maximum affinity towards

- a) Oxygen
- b) Carbon dioxide
- c) Nitrogen
- d) Carbon monoxide

iv. Simple diffusion is transport of substances

- a) along the concentration gradient
- b) needs energy
- c) substances move from region of lower concentration to the region of higher concentration.
- d) none of the above

v.The acid-base imbalance characterized by excess accumulation of organic acids in the body, which is caused by abnormal metabolic processes is

- a.metabolic alkalosis
- b.respiratory acidosis
- c.respiratory alkalosis
- d.metabolic acidosis

vi.The nerve supply to heart is as follows

- a) SA node is innervated by sympathetic nerve fibers only
- b) Atrial muscle is innervated by both sympathetic and parasympathetic nerve fibers
- c) Right Vagus nerve supplies SA node and AV node
- d) Parasympathetic supplies ventricular muscle

vii. Tidal Volume is

- a) 500 ml
- b) 3000 ml
- c) 1200 ml
- d) 3800 ml

viii. The factor which facilitate filtration in bowman's capsule

- a) Hydrostatic pressure in plasma
- b) Colloidal Osmotic pressure in plasma
- c) Hydrostatic pressure in bowman's capsule
- d) All of the above

ix. The control center for the regulation of the body's temperature is located in the

- a) Thalamus
- b) Hypothalamus
- c) Medulla Oblongata
- d) Pons

x. The primary function of tropomyosin in skeletal muscle is

- a) To cover the active sites of actin in the relaxed state of muscle
- b) To bind with myosin during muscle contraction
- c) To release Calcium for the muscle contraction
- d) To stabilize myosin filaments

### Short Answer Questions (5 X 8= 40)

2. Describe the functions of cell
3. Explain action potential
4. Discuss the layers of skin with their functions
5. Illustrate the structure of neuromuscular junction
6. Explain the functions of plasma proteins
7. Explain the pacemaker of the heart
8. Discuss the significance of lung surfactant
9. Classify the types of nephrons

### Long Answer Question (5 X 10= 50)

10. Describe the mechanism involved in the concentration of urine

11. A 15 years old boy had continuous oozing of blood following tooth extraction for caries.

Answer the following:

- What is the probable cause of the bleeding.
- Describe the extrinsic pathway of clotting using a schematic diagram.
- Mechanism of action of heparin as an anticoagulant.
- Role of vitamin K in clotting.
- Explain why blood does not normally clot inside the body

(1+3+2+2+2)

12. Define cardiac output. Discuss the factors affecting cardiac output (1+9)

13. Discuss the nervous regulation of respiration

14. Classify different type of WBC's .Discuss the function of WBCs as per their classification(3+7)