

2025

M.Sc. 3rd Semester Examination

HUMAN PHYSIOLOGY

Paper : PHY - 302

(Systems Physiology)

Full Marks : 25

Time : One Hour

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *two* questions : $2 \times 2 = 4$

1. Define vasomotion and transmural pressure. 1+1
2. Mention the location of cardiopulmonary baroreceptors. 2
3. What is intrinsic heart rate? 2
4. What are clara cells? 2

Group - B

Answer any *two* questions : $4 \times 2 = 8$

5. How is 'Metabolism' described in Systems Biology?
What do you know about "Cell Signalling Pathway
Models"? 2+2

P.T.O.

(2)

6. Describe the flow-limited and diffusion-limited transport from capillaries to tissue. 4
7. State the effects of four equal doses of propranolol and atropine on the human heart rate with a suitable diagram. 4
8. Describe the stages of lung development before birth. 4

Group - C

Answer any *one* question : 8×1=8

9. Discuss critically the vasoactive role of nitric oxide and endothelin in the capillary endothelium. Describe the pressure-flow relationship in the skeletal muscle vascular bed. 2+3+3
10. Mention the symptoms and causes of cystic fibrosis. Write the factors that affect mucociliary clearance. 4+4

Internal Assessment : 5 marks
