

2025

M.Sc. 1st Semester Examination

HUMAN PHYSIOLOGY

Paper : PHYC402X2

[System Physiology Including
Physiological Homeostasis]

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. What is intrinsic heart rate? Give its value. 1+1
2. What is meant by cell based model of blood coagulation? 2
3. Mention the types of MALT. 2
4. What is Achilles' heel? 2

Group - B

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

5. (a) How can 'Metabolism' be described in Systems Biology?

P.T.O.

(2)

- (b) How can vagal activity exert beat-by-beat control of cardiac function? 2+2
6. (a) Write down a note on Reactive Hyperemia.
- (b) Why does the gut immune system ignore commensal bacteria? 2+2
7. Discuss the homeostatic regulation of body temperature emphasizing hypothalamus as a thermostat. 4
8. What are mucolytic agents? Discuss the role of the CFTR protein in cystic fibrosis. 1+3

Group - C

Answer any *one* question : 8×1=8

9. (a) Describe the flow-limited and diffusion-limited transport from capillaries to tissue.
- (b) Discuss critically how protein expression can be regulated through redox modification of transcription factors. 4+4
10. With a suitable diagram, describe the steps of primary haemostasis. Write down the role of thrombin-thrombomodulin complex for anticoagulation mechanism. 4+4

Internal Assessment : 5 marks
