

U.G. 5th Semester Examination - 2025

PHYSIOLOGY

[MAJOR-VI]

Course Code : PHYSIOL-M-T-6

(Cellular Physiology)

[NEP-2020]

Full Marks : 40

Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP-A

1. Answer any five from the following questions:

2×5=10

- a) Define G-protein coupled receptor in cell signalling.
- b) What happens during the S phase of a cell cycle?
- c) What do you mean by physiological steady state?
- d) Write the difference between apoptosis and necrosis.
- e) Define electrophoresis.
- f) What is autophagy?
- g) What is cytokinesis?
- h) State the importance of mitosis.

[Turn Over]

GROUP-B

2. Answer any **two** from the following questions:

5×2=10

- a) State the Second Law of thermodynamics. How does this law fit into the living body? 2+3=5
- b) What is 32_p ? Discuss different uses of 32_p in biological system. 1+4=5
- c) How does PKA phosphorylate a target protein?
- d) Write a short note on Gibbs-Donnan membrane equilibrium.

GROUP-C

3. Answer any **two** from the following questions:

10×2=20

- a) Define colloids. Describe the optical property of colloids. What is autoradiography? 2+5+3=10
- b) What are nanoparticles? Write the physiological application of nanoparticles in health and medicine. 2+8=10
- c) Describe the different phases of a cell cycle with proper diagram.
- d) Write short notes on dialysis and ultrafiltration.

5+5=10