



K24P 4045

Reg. No. :

Name :

I Semester M.Sc. Degree (C.B.S.S. – Supplementary)

Examination, October 2024

(2021 and 2022 Admissions)

ZOOLOGY

ZOO1C01 : Cell Biology and Genetics

Time : 3 Hours

Max. Marks : 60

PART – A
(Cell Biology)

I. Answer **any one** of the following : (1×12=12)

- 1) Explain the synthesis, transport and post-translational modification of membrane proteins.
- 2) Explain the biochemical events and molecular pathways involved in apoptosis. Comment on the significance of apoptosis.

II. Answer **any one** of the following : (1×8=8)

- 3) Explain the different stages in cell cycle.
- 4) What are the different transport mechanisms across the plasma membrane ?

III. Write notes on **any two** of the following : (2×5=10)

- 5) What is autophagy ? Comment on its role in cellular environment.
- 6) Comment on the different modifications on cell membrane.
- 7) Comment on euchromatin and heterochromatin.

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PART – B
(Genetics)

IV. Answer **any one** of the following : (1×12=12)

- 8) Explain the different types of mobile genetic elements in bacteria and eukaryotes ? Comment on the impact of transposons in a cell.
- 9) Explain the process of recombination with suitable illustration of holliday junction formation and resolving. Briefly mention the molecular mechanisms involved.

V. Answer **any one** of the following : (1×8=8)

- 10) Explain the role of proto-oncogenes and tumor suppressor genes in cancer with suitable example.
- 11) Explain the genetic features of Bacteriophage lambda.

VI. Write notes on **any two** of the following : (2×5=10)

- 12) Comment on the role of oxidative stress and genetic instability in cancer.
- 13) Comment on Rec A protein and its functions.
- 14) Comment on transduction.