



**K23P 3300**

Reg. No. : .....

Name : .....

**First Semester M.Sc. Degree (CBSS – Supple. (One Time Mercy Chance)/  
Imp.) Examination, October 2023  
(2014 to 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 structural organization of cell membrane with suitable diagram. What are the different transport mechanisms across the membrane ?
- 2) Explain the cell cycle with the help of suitable diagram. Comment on the major check points in cell cycle.

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

- 3) Explain on nucleosome structure and its higher order folding.
- 4) Explain post translational modifications in RER.

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

- 5) Comment on the major pathways of apoptosis.
- 6) Comment on the tight junctions and gap junctions.
- 7) Comment on membrane lipids.

**PART – B  
Genetics**

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

- 8) Explain the process of homologous recombination with suitable diagram. Emphasize the role of Rec A protein in recombination.
- 9) Explain the process of genetic element exchange in bacteria. Comment on the significance of transformation.

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

- 10) What are the major characteristics of cancer cell ? Comment on the role of BRCA gene in various cancers.
- 11) What are the different transposable elements in eukaryotes ? Explain with any two examples.

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

- 12) Comment on P53 gene and its role in cancer.
- 13) Comment on lytic cycle of bacteriophage.
- 14) What is retroposons ?