D2AZL2101 **(1 Page)** **Name.....**
Reg.No.....

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2022
(Regular/Improvement/Supplementary)

ZOOLOGY
FZOL2C04: CELL & MOLECULAR BIOLOGY

Time: 3 Hours **Maximum Weightage: 30**

Part A: Answer any *four* questions. Each carries 2 weightage.

1. Write a short account on the role of Rec A protein in genetic recombination.
2. Explain briefly the structure and composition of ribosomes.
3. Write a short note on the molecular mechanism involved in homologous recombination of DNA in eukaryotes. Mention Holliday model.
4. Elaborate on Cot value and complexity of the genomes.
5. Give a brief account on the inhibitors of DNA replication.
6. Comment on the evolution of interrupted genes.
7. What are DNA tumour viruses?

(4×2 = 8 weightage)

Part B: Answer any *four* questions. Each carries 3 weightage.

8. Briefly explain new therapeutic interventions in Cancer.
9. Discuss the control of cell cycle.
10. Heterochromatin and Epigenetic control of gene expression.
11. Briefly summarise the events in prokaryotic translation.
12. Explain the special features of genetic code in mitochondria.
13. Discuss the classification and nomenclature of Restriction enzymes.
14. Give an account on the enzymes and accessary proteins involved in DNA replication.

(4×3 = 12 weightage)

Part C: Answer any *two* questions. Each carries 5 weightage.

15. Write an essay on transposable genetic elements in prokaryotes and eukaryotes.
16. Explain the concept, types and organization of Gene families.
17. Discuss regulation of gene expression in Phages and Eukaryotes.
18. Provide a detailed account on the mechanism of mRNA transcription in eukaryotes.

(2×5 = 10 weightage)