

## SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2023

(Regular/Improvement/Supplementary)

## ZOOLOGY

## FZOL2C04: CELL &amp; MOLECULAR BIOLOGY

Time: 3 Hours

Maximum Weightage: 30

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

1. Provide a brief account on satellite DNA.
2. Write on the role of protein kinases and check points on control of cell cycle.
3. Provide a brief account on the significance of Telomerase.
4. What are the new therapeutic interventions in cancer?
5. Write on the evolution of interrupted genes.
6. What is the difference between proto-oncogenes and tumor suppressor genes?
7. Write on the composition of ribosomes in prokaryotes and eukaryotes.

**(4 × 2 = 8 weightage)****Part B: Answer any *four* questions. Each carries 3 weightage.**

8. Write a short essay on the excision repair mechanisms.
9. Give a short essay on post transcriptional modification of hnRNA.
10. Write down the molecular mechanism involved in homologous recombination of DNA in eukaryotes.
11. Describe organization and role of promoters, enhancers, silencers and insulators in transcription.
12. Write on the significance of wobble hypothesis with brief notes on isoacceptor tRNAs.
13. Discuss briefly Aminoacylation of tRNA. Add notes on aminoacyl tRNA synthetases.
14. What is Antisense RNA? How is it regulating the gene expression?

**(4 × 3 = 12 weightage)****Part C: Answer any *two* questions. Each carries 5 weightage.**

15. Write an essay on Transposons. Define and write on features and types of Transposons in prokaryotes. Add notes on mechanism of transposition.
16. Discuss the models of DNA replication with their merits and demerits.
17. Give a detailed account on the regulation of gene expression in bacteria.
18. Write an essay on concept, types and organisation of gene families and write on the evolution of globin genes.

**(2 × 5 = 10 weightage)**