

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2021

ZOOLOGY

FZOL2C04: CELL & MOLECULAR BIOLOGY

Time: 3 Hours

Maximum Weightage: 30

Part A: All questions can be answered. Each carries *two* weightage (Ceiling 6 weightage).

1. What is satellite DNA and mention its application?
2. What are Okazaki fragments?
3. Explain degeneracy of the genetic code.
4. Write short notes on RNA editing.
5. Role of snoRNA.
6. Write short notes on siRNA.
7. Concept of evolutionary clock.

Part B: All questions can be answered. Each carries *four* weightage (Ceiling 12 weightage).

8. Explain the role of RecA protein in genetic recombination.
9. What are check points in cell cycle and how cell cycles are regulated?
10. Explain the major types of genes associated with the genesis of cancer.
11. What are transposons? Explain the major eukaryotic transposons.
12. Give an account on the organization and evolution of interrupted genes.
13. Describe the structure and the mechanism of regulation of arabinose operon.
14. Explain the organization and unique features of eukaryotic genomes.

Part C: All questions can be answered. Each carries *six* weightage (Ceiling 12 weightage).

15. Explain the molecular mechanisms involved in E.coli DNA replication. Add a note on the enzymes and other factors involved in replication.
16. Write an essay on major DNA damages and repair mechanisms in prokaryotes and eukaryotes.
17. With suitable illustrations explain the various steps involved eukaryotic translation. Add a note on post translational modification of proteins.
18. Explain the various (i) sequences and factors involved in eukaryotic transcription and (ii) role of spliceosome in post-translational modification of precursor mRNA.