



QP CODE: 25022293



25022293

Reg No :

Name :

M.Sc DEGREE (CSS) SPECIAL REAPPEARANCE EXAMINATION, APRIL 2025

Third Semester

M.Sc ZOOLOGY

CORE - ZL010302 - CELL AND MOLECULAR BIOLOGY

2019 ADMISSION ONWARDS

27EB741B

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is Active transport?
2. What is Proteoglycans?
3. Give note on the structure of Nuclear membrane.
4. Explain the role of protein kinase A(PKA).
5. Give note on Receptor Protein tyrosine kinase.
6. What is alternative splicing?
7. Using your knowledge in RNAi , suggest an application of the same.
8. Point out the differences between mitosis and meiosis.
9. Briefly explain cell growth and cell division.
10. Explain gene therapy and immunotherapy in cancer treatment.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. What are lysosomes? Explain its structure and formation.
12. Explain the mechanism of muscle contractility.
13. Give an account of TGFβ/Smad signaling pathway.
14. Describe the steps in the signalling pathway by which nitric oxide mediates dilation of blood vessels.
15. Give the structure and function of araBAD operon.





16. Explain how gene expression can be regulated at the level of chromatin.
17. Explain the interaction of cancer cells with normal cells.
18. What do you mean by the statement "cancer arises as the result of a genetic progression"?

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. What are Cell Junctions? Explain different types of cell junctions.
20. Comment on the basic principles of cell signalling. Give an account on the various cellular signalling pathways.
21. Give an account of translation in prokaryotes.
22. Explain apoptosis, types and its significance.

(2×5=10 weightage)

