(Pages: 3)



Reg. No. : .....

## Fifth Semester B.Sc. Degree Examination, December 2023 First Degree Programme under CBCSS

## Zoology

## **Core Course**

ZO 1541 : CELL AND MOLECULAR BIOLOGY (2019 Admission Onwards)

Time: 3 Hours

Max. Marks: 80

- I. Answer all the questions. Each question carries 1 mark.
- 1. What is oxidative phosphorylation?
- 2. What is ubiquitin?
- 3. Explain cell theory.
- 4. Write down the stages of Mitosis.
- 5. What are Free radicals?
- 6. What are the different types of RNA in a eukaryotic Cell?
- 7. What is cAMP?
- 8. List any four diseases/conditions associated with aging?
- 9. What is a carcinogen? List down two examples.
- 10. What are topoisomerases?

 $(10 \times 1 = 10 \text{ Marks})$ 

- II. Answer any **eight** of the following (Not exceeding **one** paragraph. Each carries **2** marks).
- 11. What are the functions of lysosomes?
- 12. Explain one gene one enzyme hypothesis?
- 13. What is a giant chromosome?
- 14. What is wobble hypothesis?
- 15. Mention any two post-translational modifications in eukaryotes?
- 16. What are oncogenes?
- 17. What are histones? What are their roles?
- 18. What is benign prostrate hypertrophy?
- 19. What are transcription factors?
- 20. What is nucleolus?
- 21. Mention the role of SOD.
- 22. What is fluid mosaic model?

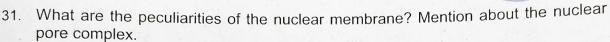
 $(8 \times 2 = 16 \text{ Marks})$ 

- III. Answer any six of the following (Not to exceed 120 words. Each carries 4 marks).
- 23. What is the structure of a ribosome? Mention the different rRNAs involved.
- 24. What are the characteristics of cancer cells?
- 25. Explain cell cycle in brief.
- 26. What are the post-transcriptional changes of a eukaryotic mRNA?
- 27. Explain the structure of a typical metaphase chromosome.

Name:....

KEHALA

- 28. Explain about chaperones.
- 29. Explain the clover Leaf model of tRNA.
- 30. Explain direct-repair and mis-match repair.





 $(6 \times 4 = 24 \text{ Marks})$ 

- IV. Answer any two of the following. Each question carries 15 marks.
- 32. Explain Lac operon.
- 33. Explain DNA replication in prokaryotes.
- 34. Explain the experiments which found out and confirmed that DNA was the genetic material.
- 35. Explain the structure of interphase nucleus and chromatin organization.

 $(2 \times 15 = 30 \text{ Marks})$