D5BZL2103 **Reg.No.....**

Name: .....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

(Regular/Improvement/Supplementary)

ZOOLOGY

GZOL5B08T: BIOCHEMISTRY AND MOLECULAR BIOLOGY

Time: 2 ½ Hours **Maximum Marks: 80**

SECTION A: Answer the following questions. Each carries *two* marks.

(Ceiling 25 Marks)

1. Explain transduction.
2. What are deoxy sugars?
3. Give the structure of Glucose.
4. What are Sphingolipids?
5. Differentiate between purines and pyrimidines.
6. Explain Chargaff's rules.
7. What is an enzyme inhibitor?
8. How does substrate concentration influence enzyme activity?
9. Explain oxidative phosphorylation.
10. What is meant by replication fork?
11. Comment on lysogenic cycle.
12. Comment on the role of Sigma factor in prokaryotic transcription.
13. Differentiate between polycistronic and monocistronic transcription units.
14. What are enhancers?
15. What are Biomolecules?

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 35 Marks)

16. Discuss Chemical method of DNA sequencing.
17. Explain the β-oxidation of fatty acids.
18. Discuss human genome and human genome project.
19. Explain Meselson and Stahl experiment and write the conclusion the scientists arrived at the end of this experiment.
20. Describe the mechanism of transcription termination.
21. Discuss the post-translational modifications of peptide chain.
22. Why sucrose is a non-reducing sugar and maltose is a reducing sugar?
23. Explain protein folding and add a note on the role of molecular chaperons.

SECTION C: Answer any *two* questions. Each carries *ten* marks.

24. Briefly explain about classification of amino acids with examples.
25. Explain kreb's cycle.
26. Discuss the characteristics of genetic code. Give a short account on Wobble hypothesis.
27. Explain the expression of gene regulation in prokaryotes with special reference to *trp* operon.

(2 x 10 = 20 Marks)