

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2025**(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. What is a glycoside?
2. Write notes on pseudogenes.
3. What is meant by isoelectric point of amino acids?
4. Distinguish between temperate and virulent phages.
5. Write a brief account on Prokaryotic RNA Polymerase.
6. What are triglycerides?
7. Highlight the importance of Hydrogen Bonds in stabilizing biomolecules.
8. What is chiral carbon?
9. Explain chemiosmotic synthesis of ATP.
10. Name the enzymes involved in DNA replication.
11. What are housekeeping genes?
12. Explain codon-anticodon recognition.
13. Comment on silencers.
14. What is the poly (A) tailing of mRNA?
15. Distinguish between overlapping genes and jumping genes.

SECTION B: Answer the following questions. Each carries *five* marks.**(Ceiling 35 marks)**

16. Give a short account on Activation energy and transition state.
17. Write a note on amino acid oxidation.
18. What are the biological functions of carbohydrates?
19. Explain central dogma of molecular biology. Discuss reverse transcription and modified central dogma.
20. What is a spliceosome? Explain its roles and significance.
21. Explain conjugation in bacteria.
22. Discuss how the scientific community learned that DNA replication takes place in a semiconservative fashion.
23. What is satellite DNA?

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

24. Write an essay on DNA sequencing.
25. Describe the pathway of Glycolysis.
26. Explain structural organizations in proteins.
27. Discuss the process involved in translation.

(2 x 10 = 20 Marks)