

**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**  
**(Regular/Improvement/Supplementary)**

**ZOOLOGY**

**GZOL5B08T: BIOCHEMISTRY AND MOLECULAR BIOLOGY**

**Time: 2 ½ Hours**

**Maximum Marks: 80**

**SECTION A: Answer the following questions. Each carries 2 marks.**  
**(Ceiling 25 Marks)**

1. Mention the biological importance of hydrophobic interactions.
2. Give the structure of Fructose.
3. List the physiologically important hexoses.
4. What are amino acids?
5. How is a peptide bond formed?
6. Give an account on super secondary structure of protein.
7. What are fatty acids? Give examples.
8. Outline the functions of the hexose monophosphate (HMP) pathway.
9. Mention the significance of DNA ligase.
10. Define luxury genes.
11. Write a short note on initiation codon.
12. What are silencers?
13. Write note on cistron.
14. What are molecular chaperons?
15. Discuss RNA interference.

**SECTION B: Answer the following questions. Each carries 5 marks**  
**(Ceiling 35 Marks)**

16. What are the different classes of polysaccharides?
17. Discuss in detail about Polyacrylamide Gel Electrophoresis.
18. Define the terms apoenzyme, holoenzyme and prosthetic group.
19. Explain gluconeogenesis.
20. Describe the life cycle of a temperate phage.
21. Briefly discuss Meselson and Stahl's experiment.
22. What is wobble hypothesis?
23. What is splicing? Why it is not seen in prokaryotes?

**SECTION C: Answer any 2 questions. Each carries 10 marks.**

24. Discuss the Watson-Crick model of DNA structure
25. Give a brief overview of the citric acid cycle.
26. Discuss the process involved in translation of prokaryotes.
27. What is operon? Explain the concept of operon briefly.

**(2 x 10 = 20 Marks)**