



SG – 272

VI Semester B.Sc. Examination, September/October 2021
(CBCS) (F+R) (2016-17 and Onwards)
CHEMISTRY (Paper – VIII)
Bio-Chemistry

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) The question paper has **two** Parts. Answer **both** the Parts.
2) Write diagrams and equations **wherever** necessary.

PART – A

Answer **any eight** of the following questions. **Each** question carries **two** marks : **(8×2=16)**

1. Mention the major contributions of each of the following biochemists in the development of biochemistry
 - i) Emil Fischer
 - ii) Lavoisier
2. Write the Haworth structure of isomaltose.
3. Why phospholipids are called amphipathic compounds ?
4. Write the Zwitterionic form of alanine.
5. The two strands of DNA are anti parallel. Explain.
6. Define Michaelis Menten constant. Give its significance.
7. What is P/O ratio ?
8. How is pyruvate converted to ethanol ?
9. How are fatty acids activated ? Write the equation.
10. Write the principle involved in electrophoresis.
11. Give any two applications of DNA finger printing.
12. Name the hormones involved in blood sugar regulation.

P.T.O.



PART - B

Answer any nine of the following questions. Each question carries six marks : (9×6=54)

13. a) Discuss the principle and applications of paper chromatography. (4+2)
b) Water is the medium of life. Comment.
14. a) What are the components of starch ? Indicate the structural differences between them. (4+2)
b) Write the partial structure of chitin.
15. a) What are lipids ? How are they classified ? Give example for each class. (4+2)
b) Write the structure of Cephalin.
16. a) What is the biological role of epinephrine ? Where it is produced ? (4+2)
b) What are liposomes ? Give its significance.
17. a) How does amino acids react with
i) HNO_2
ii) Alcohol
b) Give the classification of proteins based on the structure with examples. (4+2)
18. a) What is a peptide bond ? Why it is planar in nature ? (4+2)
b) What is denaturation of proteins ?
19. a) Write the different types of RNA and their biological roles. (4+2)
b) What is the difference between nucleoside and nucleotide ?
20. a) Explain different types of specificity exhibited by enzymes with example. (4+2)
b) Explain Koshland's induced fit theory of enzyme action.
21. a) Describe the organisation of electron carriers in the mitochondrial electron transport chain diagrammatically. (4+2)
b) What is an apoenzyme and halo enzyme ?



22. a) Give the equation for the reduction of acetaldehyde by NADH.
b) Give any two differences between oxidative phosphorylation and substrate phosphorylation.
c) What is transamination ? Give example. **(2+2+2)**
23. a) Give the sequence of reactions by which an activated fatty acid undergo β -oxidation in mitochondria.
b) How does pyruvate formed during glycolysis enter the TCA cycle ? **(4+2)**
24. a) Write the reaction of TCA cycle catalysed by (i) citrate synthetase (ii) Malate dehydrogenase.
b) Write the reaction of urea cycle where urea is formed. **(4+2)**
25. a) Outline the semi conservative mode of replication of DNA.
b) What is transcription ? **(4+2)**
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