

Q.P. Code – 22636

Sixth Semester B.Sc. Degree Examination, September 2020

(Non-CBCS – Semester Scheme)

Chemistry

Paper VIII – BIOCHEMISTRY

Time : 3 Hours]

[Max. Marks : 60

Instructions to Candidates :

- 1) The question paper has two Parts A and B. Both parts should be answered.
- 2) Structure and equations are to be given wherever necessary.

PART – A

Answer any **SIX** questions. Each question carries **2** marks : **(6 × 2 = 12)**

1. Mention the contributions of the following scientists in the development of Biochemistry.
(a) Emil Fisher and
(b) Sanger
2. Write the structure of glucaronic acid? Give its biological importance.
3. Give the chemical name of Vitamin-C. Mention the disease caused by its deficiency.
4. What is transcription?
5. What are energy coupled reactions?
6. Write the structure of ATP.
7. What are hormones? Give an example for amino acid derivative hormone.
8. What is primary structure of a protein?
9. "Amino acids are amphoteric in nature" Justify the statement.
10. What is the fate of pyruvate under anaerobic condition?

PART – B

Answer any **EIGHT** questions. Each question carries **6** marks : **(8 × 6 = 48)**

11. (a) What are aminosugars? Write the structure of β -D Glucosamine. Mention its biological importance. **(4 + 2)**
(b) Write the partial structure of starch.
12. (a) What are phospholipids? Write the structure of phosphotidyl choline and its biological importance. **(4 + 2)**
(b) Explain the role of water in biological system.
13. (a) Explain the tertiary structure of a protein and mention the forces involved in the stabilization of tertiary structure of a protein. **(4 + 2)**
(b) What is rancidity? How it is prevented?
14. (a) What is denaturation of proteins? Mention the factors responsible for denaturation of proteins. **(4 + 2)**
(b) What are nucleosides? Give an example with its structure.
15. (a) Explain the double helical structure of DNA. **(4 + 2)**
(b) Define the following :
(i) Active site of an enzyme and
(ii) Enzyme inhibitors
16. (a) Explain the two models proposed to explain enzyme substrate interaction. **(4 + 2)**
(b) What is the effect of pH on the rate of enzyme catalysed reaction?
17. (a) Describe the arrangement of different electron carriers in the Electron transport chain showing the sites of ATP production. **(4 + 2)**
(b) What is substrate level phosphorylation? Give an example.
18. (a) Explain the different stages of catabolism. **(3 + 3)**
(b) Discuss energetics of β -oxidation of palmitic acid.

19. (a) Explain any two dehydrogenation reactions of Kreb's cycle.
(b) What is transamination? Give an example. (4 + 2)
20. (a) Explain semi conservative mode of DNA replication.
(b) What is central dogma of Molecular Biology? (4 + 2)
21. (a) Name the two polypeptide hormones. Give their biological importance.
(b) What are Vitamins? Write the chemical name of the following : (i) Vit. A and (ii) Vit. D. (4 + 2)
22. (a) What are lipids? How they are classified? Give an example for each class.
(b) Write the glycolysis catalysed reactions by the following enzymes :
(i) Hexokinase and
(ii) Phosphofructo kinase (4 + 2)

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