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Fifth Semester B.Sc. Degree Examination, March/April 2021

(CBCS – Semester Scheme)

Biochemistry

Paper V — BIOCHEMISTRY

Time : 3 Hours]

[Max. Marks : 70

Instructions to Candidates :

- 1) This paper is for the students of new syllabus: 2014-15.
- 2) The Question Paper has two Parts: Part-A and Part-B.
- 3) Answer any EIGHT questions from Part-A.
- 4) Answer any NINE questions from Part-B.

PART – A

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

1. What are epimers? Give an example.
2. Write the structure of isomaltose.
3. What are heteropolysaccharides? Give an example.
4. Write any two importance of phospholipids.
5. Define saponification number and give its significance.
6. What are androgens? Mention any two of their biological functions.
7. Write any two biological importance of oxytocin.
8. How does an amino acid react with Sanger's reagent?
9. What is redox reactions? Give an example.
10. Give the relationship between standard free energy change and equilibrium constant.
11. What is P:O ratio?
12. Write the structure of ATP.



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PART - B

Answer any **NINE** of the following questions. Each question carries **6** marks :

(9 × 6 = 54)

13. (a) Explain about plant storage polysaccharide.
(b) Write the structure of glucose-6-phosphate. Give its biological importance. **(4 + 2)**
14. (a) Write the partial structure of any two heteropolysaccharides.
(b) Differentiate between glucaric and glucuronic acid. **(4 + 2)**
15. (a) Why ATP is energy currency of cell? Explain.
(b) What are cardioglycosides? **(4 + 2)**
16. (a) How are lipids classified? Give an example for each class.
(b) What is PUFA? Give an example. **(4 + 2)**
17. (a) Explain the Singer and Nicolson model of biological membrane.
(b) Give the biological importance of cholic acid. **(4 + 2)**
18. (a) Mention the biological role of (i) cholesterol (ii) micelles.
(b) What is meant by rancidity? **(4 + 2)**
19. (a) What are Prostaglandins? Mention their biological importance.
(b) Write the structure of phosphatidyl ethanolamine. **(4 + 2)**
20. (a) How does an amino acid reacts with Ninhydrin and Formaldehyde?
(b) What is meant by peptide bond? **(4 + 2)**
21. (a) Write a note on forces involved in the stabilization of tertiary structure of proteins.
(b) What are essential amino acids? Give an example. **(4 + 2)**

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22. (a) Mention the types of secondary structure of proteins and describe any one of them.
- (b) What are exergonic reactions? Give an example. (4 + 2)
23. (a) Explain the salient features of oxidative phosphorylation.
- (b) Mention any two aromatic amino acids. (4 + 2)
24. (a) Write the role of the following components in ETC :
- (i) FMN
- (ii) NAD^+
- (iii) Ubiquinone
- (iv) Cytochrome C.
- (b) Give the structure of Coenzyme Q. (4 + 2)
25. (a) What are High energy compounds? Mention three examples.
- (b) Mention the number of ATP molecules produced by NADH and FADH_2 . (4 + 2)

