61513

V Semester B.Sc. Degree Examination, April/May 2023
(CBCS – Semester Scheme)
BIOCHEMISTRY
Biochemistry Paper – V

Time : 3 Hours Max. Marks : 70

Instructions : *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. Define anomer with an example.
2. Write the structure of isomaltose.
3. What are glycosaminoglycans ? Give an example.
4. Mention any two biological importance of waxes.
5. What is iodine number ? Give its significance.
6. What are androgens ? Mention their functions.
7. Write any two biological importance of vasoperin.
8. What are ampholytes ? Give an example.
9. Give the relationship between standard free energy change and equilibrium constant.
10. State First law of thermodynamics.
11. What are redox reactions ? Give an example.
12. Write the structure of ATP.

P.T.O.

PART – B

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

13. a) Elucidate the open chain structure of glucose.
    b) Write the structure of Fructose –1, 6 – diphosphate. Mention their function. **(4+2)**

14. a) Write the partial structure of hyaluronic acid and chondroitin-4-sulphate. Mention their biological importance.
    b) List out any two biological importance of carbohydrates. **(4+2)**

15. a) What are lipoproteins ? Mention their types and functions.
    b) Give the biological significance of cholic acid. **(4+2)**

16. a) Explain the ABO blood grouping system.
    b) What is PUFA ? Give an example. **(4+2)**

17. a) Enumerate the salient features of fluid mosaic model.
    b) What are prostaglanins ? **(4+2)**

18. a) Why ATP is energy currency of the cell ?
    b) Write the structure of phosphatidyl inositol. **(4+2)**

19. a) How does an amino acid reacts with Ninhydrin and formaldehyde ?
    b) What are aromatic amino acids ? Give an example. **(4+2)**

20. a) Explain the forces that stabilises the tertiary structure of proteins.
    b) What is meant by oxidative rancidity ? **(4+2)**

21. a) How are proteins classified based on composition ? Explain.
    b) What are endergonic reactions ? Give an example. **(4+2)**

22. a) Explain α-helical structure of proteins.
    b) How is sakaguchi's test carried out ? **(4+2)**

23. a) Explain the salient features of oxidative phosphorylation.
    b) Define P : O ratio. **(4+2)**

24. a) What are high energy compounds ? Mention any three examples.
    b) What are cytochromes ? Give their importance. **(4+2)**

25. a) Explain the stages of energy transformation in living systems.
    b) Mention the number of ATP molecules produced by NADH and $FADH_2$. **(4+2)**
