(Pages : 3) **N – 4247**

Reg. No. : .....

Name : .....

First Semester B.Sc. Degree Examination, June 2022

Career Related First Degree Programme Under CBCSS

Botany and Biotechnology

BB 1131 — INTRODUCTION TO BIOCHEMISTRY

(2014-2019 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – I

(Very Short Answer Type – Maximum two sentences)

Answer **all** questions.

1. What happens to ionic product of water?
2. What is pH concept?
3. Define normality.
4. Give a note on osmosis.
5. What are the uses of emulsifying agents?
6. Write any two uses of spectrophotometer.
7. What is centrifugation?
8. Define electrophoresis.

P.T.O.

9. What is keto-enol tautomerism?

10. What is glycosidic bond? Give example.

(10 × 1 = 10 Marks)

SECTION – II

Answer any **eight** questions, not to exceed one paragraph.

11. Write the theoretical calculation of pOH.

12. What is the pH of a solution of 0.36 M HCl, 0.62 M NaOH, and 0.15 M HNO_3?

13. Define mole fraction.

14. Give an account on hypertonic and hypotonic solution.

15. Write three properties of emulsion.

16. Write difference between suspension and colloids.

17. State Beer-Lambert's law and its application.

18. Write the principle of isopycnic centrifugation.

19. Write the principle of chromatography with its types.

20. Write the applications of zone electrophoresis.

21. What is a covalent bond? Give some examples.

22. Define disulphide bond.

(8 × 2 = 16 Marks)

SECTION – III

Answer any **six** questions, not to exceed 120 words.

23. Explain out the disassociation of weak acids.

24. Write the difference between osmosis and diffusion.

25. List the differences between lyophilic and lyophobic colloids.

26. Write the significances of Donnan equation.

27. Describe the principle and procedure for density gradient centrifugation.

28. Explain the principle and procedure for affinity chromatography.

29. Brief note on gel electrophoresis.

30. Write the difference between intra and intermolecular interactions in biological system.

31. Give an account on Van der Waals.

(6 × 4 = 24 Marks)

SECTION – IV

Long Essay.

Answer any **two** questions.

32. Give an account on principle of working pH meter and write its application.

33. Explain in detail about SDS-PAGE and give the reason why it is a suitable technique for the protein separation.

34. Discuss the principle, procedure and applications gel filtration chromatography.

35. Elaborate the classification of isomerism with examples.

(2 × 15 = 30 Marks)

———————