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Reg. No. :

Name :

First Semester B.Sc Degree Examination, March 2023

Career Related First Degree Programme Under CBCSS

Group 2(a) – Botany and Biotechnology

Complementary Course I

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. Why the dissociation of water is important?
2. What is meant by buffer capacity?
3. Define molarity.
4. What causes viscosity?
5. What is true solution?
6. What are colloids?
7. Mention the different types of cuvettes used in colorimeter.
8. What are the uses of pH meter?

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9. Expand SDS-PAGE.

10. How are peptide bonds formed?

(10 × 1 = 10 Marks)

SECTION – II

Short answer questions-not to exceed **one** paragraph. Answer any **eight** questions.

11. Write the theoretical calculation of pH.
12. Why do weak acids not dissociate completely?
13. What does 2% solution mean?
14. Define isotonic solution.
15. Write three properties of emulsion.
16. Write difference between suspension and colloids.
17. Write the principle for spectrophotometer.
18. Write note on molar extinction coefficient.
19. What is the basic principle of TLC?
20. Where is gel filtration chromatography used?
21. Write are some common functional group.
22. What is hydrogen bonding? Give some examples.

(8 × 2 = 16 Marks)

SECTION – III

Short essay-not to exceed **120** words. Answer any **six** questions.

23. Derive Henderson-hasselbalch equation.
24. Briefly explain about Vant Hoff's laws of osmotic pressure.
25. Write the difference between emulsion and colloids.

26. Give account on three types of crystalloids with examples.
27. Write principle and applications of colorimeter.
28. Discuss about the technique ultra centrifugation.
29. Explain the principle and procedure of paper chromatography.
30. What is electrophoresis? Explain the principle of cellulose acetate electrophoresis.
31. Write the difference between intra and intermolecular interaction in biological system.

(6 × 4 = 24 Marks)

SECTION – IV (Long Essay)

Answer **any two** questions.

32. What is mean by buffer? Write the buffer action buffer capacity in biological system.
33. Explain Donnan membrane equilibrium and its biological significance.
34. Write the principle, procedure and applications of differential centrifugation.
35. Discuss in detail about ion exchange chromatography technique with its principle.

(2 × 15 = 30 Marks)