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U – 1464

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, November 2024

Career Related First Degree Programme under CBCSS

Group 2(a) – Botany and Biotechnology

Complementary Course

BB 1131 : PHYSICAL ASPECTS OF BIOCHEMISTRY

(2020 – 2023 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** the questions in a word or **one** or **two** sentences. Each question carries **1** mark.

1. Define PH.
2. Write the Henderson-Hasselbalch equation.
3. What is normality?
4. Define isotonic solution.
5. Give an example of emulsifying agents.
6. Define sedimentation coefficient.
7. Give the abbreviation of PAGE.
8. How is H-bond formed?
9. What is functional group of acid?
10. What are the type of rotors?

(10 × 1 = 10 Marks)

P.T.O.



SECTION – B

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

11. Explain the Dissociation of Water.
12. Distinguish lyophilic and lyophobic colloids.
13. Write the biologically important peptides.
14. Give the principle of van't Hoff law.
15. Write an account of biologically important colloids.
16. Give a note on crystalloids.
17. Explain Beers-Lambert's law.
18. What are the basic principles of sedimentation?
19. Write the basic principle of thin layer chromatography.
20. State the applications of paper chromatography.
21. Differentiate hypertonic and hypotonic solution.
22. Write D and L isomers with examples.

(8 × 2 = 16 Marks)

SECTION – C

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

23. Explain the different types of centrifugal rotors with diagram.
24. Derive the Henderson-Hasselbalch equation.
25. Discuss the Donnan membrane equilibrium and its significance.
26. Write the principles and applications of differential centrifugation.
27. Discuss the principle and applications of affinity chromatography.
28. Explain the principle and application of spectrophotometer.
29. How do you classify isomerism? Explain various types of isomers with examples.



30. Explain the Non-covalent bond with examples.
31. Describe the principle, techniques and applications of ultracentrifuge.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Answer not to exceed **3** pages.

32. Explain the principle procedure and application of SDS-PAGE.
33. Describe the principle procedure and application density gradient centrifugation.
34. Write the biological importance of osmosis surface tension and viscosity.
35. Explain the inter and intramolecular interaction in biological system.

(2 × 15 = 30 Marks)

