

D 124432

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Name.....

Reg. No.....

**SECOND SEMESTER (CBCSS-UG) DEGREE (SUPPLEMENTARY)
EXAMINATION, APRIL 2025**

Biochemistry

BCH 2C 02—BIOCHEMISTRY – II

(2020 Syllabus)

Time : Two Hours

Maximum : 60 Marks

Section A*Answer all questions; each question carries 1 mark.*

1. Which plasma protein is important for maintaining blood osmotic pressure ?
 - a. Haemoglobin.
 - b. Albumin.
 - c. Fibrinogen.
 - d. Globulin.
2. Which kind of transport requires the use of specialised carrier proteins while consuming no energy ?
 - a. Active transport.
 - b. Osmosis.
 - c. Facilitated diffusion.
 - d. Simple diffusion.
3. What is the primary objective of a buffer solution ?
 - a. to neutralise strong acid.
 - b. to maintain steady pH.
 - c. to increase hydrogen ion concentration.
 - d. to prevent water dissociation.
4. ————— molecules are often separated using ion exchange chromatography.
5. The enzyme ————— catalyses the conversion of fibrinogen to fibrin during the coagulation cascade.
6. In electrophoretic methods, what does SDS stand for ?
7. What is the underlying principle that governs the operation of a colourimeter ?
8. In column chromatography, which phase is the porous solid material in the column.
9. Give an example of an emulsion.

(1 × 9 = 9 marks)

Turn over

Section B

*Answer any **seven** questions ; each question carries 3 marks.*

10. What is the difference between facilitated diffusion and simple diffusion ?
11. Why are titration curves important in the analysis of strong acids and bases ?
12. Describe briefly how a colourimeter works and the scientific concept underlying its measurements.
13. Define osmosis.
14. Describe Gel filtration chromatography.
15. Describe the terms pH and pOH.
16. Define colloids, analyse the properties that distinguish colloids from other solutions, and give examples.
17. Describe the primary function of glucose transporters in the cellular process.

(7 × 3 = 21 marks)

Section C

*Answer any **four** questions ; each question carries 5 marks.*

18. Examine the basic principles and applications of ion exchange chromatography.
19. Explain the mechanism of diffusion and how it works in biological systems.
20. Contrast the benefits and drawbacks of SDS-PAGE with Native PAGE.
21. Summarise the Immunoelectrophoresis concepts and applications.
22. Examine the spectrophotometer components.

(4 × 5 = 20 marks)

Section D

*Answer any **one** question ; the question carries 10 marks.*

23. Describe the role and significance of blood clotting in preventing excessive bleeding, emphasising the role of several components in blood clotting
24. Explain the gel composition, electrophoresis procedure, and staining techniques employed in SDS-PAGE, focusing on their contributions to protein separation and visualisation.

(1 × 10 = 10 marks)