

Reg. No. : .....

Name : .....

**Third Semester B.Sc. Degree Examination, March 2022**

**Career Related First Degree Programme Under CBCSS**

**Group 2(a) : Biochemistry and Industrial Microbiology**

**Core Course II**

**IM 1341 – METHODS IN BIOCHEMISTRY**

**(2019 Admission)**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

Answer **all** questions. Answer in **a** word to a maximum of **two** sentences. **Each** question carries **1** mark.

1. What is svedberg?
2. What is density gradient centrifugation?
3. Name the gel commonly used for the electrophoretic separation of proteins.
4. How are the aminoacids separated on a TLC plate revealed?
5. Define transmittance.
6. Which blotting technique is used for DNA?
7. What is the main demerit in alkali hydrolysis of proteins?
8. What is meant by isoelectric precipitation of proteins?

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9. What is Sanger's reagent?
10. Name a gel used in gelfiltration of proteins.

(10 × 1 = 10 Marks)

#### SECTION – B

Answer any **eight** questions. Answer **not** to exceed **one** paragraph. **Each** question carries **2** marks.

11. Make a note on Beer-Lambert law.
12. What is the principle of isoelectric focussing?
13. What is the principle of TLC?
14. What are cation exchange resins? Give two examples
15. What is the principle of affinity chromatography?
16. What are the applications of ion exchange chromatography?
17. Make a note on two dimensional paper chromatography.
18. How is a standard curve prepared for protein estimation by UV spectrophotometry?
19. What are properties of beta rays?
20. What is the principle of autoradiography?
21. What are the properties of peptide bond?
22. How is protein hydrolysed?
23. What are fibrous proteins?



24. What is salting out?
25. What is meant by primary structure of a protein?
26. Define tertiary structure of proteins and list bonds involved.

(8 × 2 = 16 Marks)

#### SECTION – C

Answer any **six** questions. Answer **not** to exceed **120** words. **Each** question carries **4** marks.

27. Explain the principle and applications of differential centrifugation.
28. Explain cell fractionation.
29. Explain how molecular mass of a protein is determined by SDS-PAGE?
30. Explain the principle and procedure of TLC.
31. Explain the principle and applications of colourimetry.
32. How is molar extinction coefficient determined?
33. Outline the principle and applications of affinity chromatography.
34. Enumerate steps in synthesis of small peptides.
35. Discuss the uses of radio isotopes in medicine.
36. Outline steps in the determination of N terminal amino acids of peptides.
37. Explain the physical properties of proteins.
38. Discuss the secondary structure of proteins.

(6 × 4 = 24 Marks)

## SECTION – D

Answer any **two** questions. **Each** question carries **15** marks.

39. Describe the principle, procedure and applications of agarose gel electrophoresis.
40. Discuss principle, instrumentation and applications of UV-visible spectrophotometry.
41. Describe the various blotting techniques.
42. How is primary structure of a protein determined?
43. Explain the principle, procedure and applications of density gradient centrifugation.
44. Explain the principle, procedure and applications of gel filtration.

(2 × 15 = 30 Marks)