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N – 2814

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 — ANALYTICAL BIOCHEMISTRY AND BIOPHYSICAL CHEMISTRY**  
**(2020 Admission).**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

Answer all questions. Each question carries 1 mark.

Very short answer :

1. What is sedimentation coefficient?
2. Define osmotic pressure.
3. Expand SDS-PAGE.
4. Define Centrifugation.
5. Expand BLAST.
6. Define Range.  
90, 50, 72, 69, 85, 100, 73, 85, 93.
7. Define pH.

P.T.O.

8. Define Molarity.
9. What is a Colloid?
10. What is salting out?

(10 × 1 = 10 Marks)

#### SECTION – B

Answer any **eight** questions. Each question carries **2** marks.

11. What is Science?
12. Define hypothesis.
13. What is a software?
14. Write the principle of chromatography.
15. Define electrophoresis.
16. What is R<sub>f</sub> value?
17. Explain lamberts law.
18. What are the types of centrifugations?
19. What is the difference between settling and sedimentation?
20. How is disulfide bond disrupted for electrophoretic separation?
21. What is a histogram?
22. Define Chi Square test.
23. What is Normality and Molality?
24. What is diffusion?
25. What is isotonic solution?
26. Define Isoelectric pH and its significance.

(8 × 2 = 16 Marks)

#### SECTION – C

Answer any **six** questions. Each question carries **4** marks.

27. Explain the types of knowledge.
28. Write the features of PowerPoint.

29. Explain the principle and application of SDS-PAGE.
30. Write about Affinity chromatography.
31. Write principle and application of differential centrifugation.
32. Explain cell dispersion technique.
33. Define the scope of Bioinformatics.
34. Explain subcellular fractionation.
35. Define Null hypothesis.
36. Explain the basic idea about regression.
37. What is Handerson-Hasselbach equation?
38. Define  $K_a$  and  $pK_a$  values.

(6 × 4 = 24 Marks)

#### SECTION – D

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

39. Illustrate the overview of operating system and give the applications of software.
40. Explain the principle, procedure and application of paper chromatography.
41. Explain the principle and application of density gradient and ultra-centrifugation.
42. How similarity and identity is inferred from BLAST result.
43. Write brief note on :
  - (a) Biological significance of osmosis.
  - (b) Osmotic pressure.
  - (c) Mole fraction.
44. What are colloid? Explain the application and properties of colloids.

(2 × 15 = 30 Marks)