

15. Aluminium ion can be precipitated at pH _____
16. Recrystallization involving more than one solvent is termed as _____
17. _____ filter is used in turbidimeter.
18. Sectioning is accomplished by using a cutting apparatus called a _____
19. The ratio of increase in size of optical image over the actual size of object being viewed is _____
20. The source used for UV radiation is _____ lamp.

III. MATCH THE FOLLOWING: (5 x 1 = 5 Marks)

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|------------------|----------------------------|
| 21. Agarose gel | A. Scattered light |
| 22. Desiccant | B. Heavy metals |
| 23. Formalin | C. polysaccharide polymers |
| 24. TEM | D. Fixatives |
| 25. Nephelometry | E. Calcium Chloride |

IV. ANSWER IN ONE / TWO LINES: (5 x 1 = 5 Marks)

26. Expand FIGE?
27. What is solubility product?
28. Define Sedimentation coefficient.
29. Define Beer-Lambert's law.
30. What is confocal microscopy?

SECTION – B

V. Answer any FIVE of the following: (5 x 6 = 30 Marks)

31. Describe the principle and procedure for Isolation of Chloroplast
32. Draw the schematic diagram of flame photometer. Explain its principle.
33. Explain the criteria required for an ideal extraction solvents.
34. a) Describe the different types of chemicals used as fixatives. (3 Marks)
- b) What is drying and igniting the precipitate? (3 Marks)
35. What is fractional distillation? Give its applications.
36. Explain the principle and applications of Phase contrast Microscopy.
37. a). Differentiate between co-precipitation and post precipitation. (3 Marks)
- b). List the steps involved in differential centrifugation with a flow chart. (3 Marks)

SECTION-C

VI. Answer any TWO of the following: (2 x 20 = 40 Marks)

38. a) What is meant by Paraffin Infiltration and Embedding ? Elaborate how sectioning is performed. (10 Marks)
- b) What is Soxhlet extraction? Explain its working principle with a diagram.(10 Marks)
39. a) Discuss the principle, instrumentation and application of Fluorescence spectrometry
- b) Explain how nucleation and crystal growth affect the particle size of the precipitate.
- c) Explain the principle, instrumentation and mechanism involved in capillary electrophoresis.
40. Write short notes on : (4 x 5 = 20 Marks)
 - (i) Sublimation
 - (ii) Recrystallisation
 - (iii) Refrigerated Centrifuge
 - (iv) SDS- PAGE
