

Time: 2 ½ Hours

Marks : 75

Note

1. Attempt all questions.
2. All questions carry equal marks.
3. Draw neat labeled diagram wherever necessary.
4. Use of log tables and non programmable calculator is allowed.
5. For Q2, Q3 and Q4 attempt A and B OR C and D.

Q1. Do as directed: (Any fifteen)**(15M)****Define:**

1. Meso compounds.
2. Asymmetric carbon atom.
3. End point of titration.
4. Diverse ion effect.
5. Solubility product.
6. Transmittance
7. Mobile phase
8. Solvent extraction.

Fill in the Blanks:

9. Ethanol ($\text{CH}_3\text{CH}_2\text{OH}$) & dimethyl ether ($\text{CH}_3\text{-O-CH}_3$) are _____ isomers of each other.
10. Plane-polarised light is affected by _____ molecule.
11. The colloidal state has particle size ranging from -----nm to -----nm.
12. _____ is a source of visible light in colorimeter.

State true or false:

13. Geometrical isomers are also called as Diastereomers.
14. Meso-tartaric acid is optically inactive as it is a racemic mixture.
15. Silica gel G is adsorbent used in TLC.

Give examples of:

16. Organic reagents used in gravimetric analysis.
17. Substances used as secondary standards.

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Name the following:

- 18. Type of paper chromatography.
- 19. Device used for sample application in column chromatography.
- 20. The solution filled in the burette in volumetric analysis.

Q.2 A) What are structural isomers? Explain the different types structural isomers with (8M) suitable examples.

Q2. B) What is meant by Projection Formula? Explain Fischer projection (7M) formula.

OR

Q2. C) Differentiate between Enantiomers and Distereoisomers. (8M)

Q2. D) Explain the different conformations of Ethane. (7M)

Q3. A) Discuss general types of titrimetric methods. (8M)

Q3.B) Explain the factors affecting solubility of a precipitate. (7M)

OR

Q3.C) Explain the importance of drying and washing in gravimetric analysis. (8M)

Q3.D) Give detailed account of neutralization curve of strong acid and strong base. (7M)

Q4.A) State Beer – Lambert’s law and enlist its limitations. (8 M)

Q4.B) Discuss column chromatography in brief. (7 M)

OR

Q4 C) Define precipitation and explain it in details. (8 M)

Q4.D) Explain the principle and working of thin layer chromatography. (7 M)

Q5. Write a short note on (any three) (15M)

- a) Optical isomerism.
- b) Stereoisomer.
- c) Range of indicators.
- d) Distillation.
- e) Ascending paper chromatography.
