

(Time :3 Hours)

(Total Marks : 80)

- N.B:**
1. Question.No.1 is compulsory.
 2. Attempt any three questions from Q.No.2 to Q.No.6
 3. Assume suitable data.
 4. Figures to the right indicate full marks.

Q1 Solve any Four out of Six (20)

- A Write in detail about acid base reactions & solvolysis w.r.to liq.NH₃ as non-aqueous solvent.
- B Explain features of IR spectroscopy.
- C Explain High Performance Liquid Chromatography (HPLC).
- D Write in detail origin of charge on colloidal particles.
- E Write down two chemical properties of Aceto Acetic Ester.(AAE)
- F Define catalyst. Explain its characteristics. (Any 3)

Q2 (20)

- A Differentiate between True solution & colloidal solution.
- B Write in detail about Levelling effects of solvents.
- C Write in detail the Principle and any 2 applications of Gas solid Chromatography.
- D Explain Thermal Gravimetric Analysis, with its applications.

Q3 (20)

- A Explain no. of H¹ NMR signals in
a. CH₃-CHBr-COOH
b. CH₃CH₂COOCH₂CH₃
- B Explain emulsions in detail.
- C Write Autocatalysis & Activation energy.
- D Give an account of Beckmann rearrangement.

Q4 (20)

- A Explain Paper Chromatography.
- B Explain aromatic character of Naphthalene.
- C Give the Principle & any 2 applications of UV spectroscopy.
- D Give the application of colloids in Pesticides.

Q5

(20)

- A Write any 2 applications of Aceto acetic ester.
- B Explain Dielectric constant & dipole moment of Ionising solvents.
- C What is Chromatography? What do you mean by Partition chromatography?
- D Write in detail about Catalytic Promoters and Catalytic Inhibitors with examples.

Q6

(20)

- A What is the concept of Electrokinetic potential? Explain Dorn effect.
- B Write in detail principle and working of Gas chromatography- Mass Spectrometry (GC-MS).
- C Write a note on Precipitation reactions & Redox reactions of liq SO₂..
- D Write in detail any 2 preparation methods of Malonic ester.
