

Time: 3 hours

Max. Marks: 80

- N.B: 1. Question.No.1iscompulsory.
2. Attempt any three questions fromQ.No.2 to Q.No.6

Q1 Solve any Four out of Six (20 Marks) (5 Marks each)

- A Define catalyst. What is the criteria for selecting material as a catalyst?
B Explain Electrophoresis in detail & how is it related to zeta potential.
C What are advantages of TLC over other chromatography techniques?
D What do you understand by Differential thermal Analysis (DTA)? Give ANY 3 applications.
E Give an account of Reformatsky reaction.
F Explain dielectric constant of ionising solvents. Explain importance of non -aqueous solvents.

Q2 (20 Marks) (5 Marks each)

- A Explain Dorn effect in case of colloids.
B What are non-aqueous solvents? Give the levelling effect of solvents.
C Explain Chemical shift &Shielding & deshielding of protons in NMR spectroscopy.
D Explain keto enol tautomerism in case of acetoacetic ester with any one preparation method.

Q3 (20 Marks) (5 marks each)

- A What is R_f value? Explain it with concept of paper chromatography.
B Give applications of IR spectroscopy in detail.
C Describe acid base catalysis in detail.
D Explain conversion of ketooximes to amide.

Q4 (20 Marks) (5 marks each)

- A What is meant by thermogravimetry? Give any two applications in detail.
B Explain (Benzil → KOH → -----) in detail, with reaction mechanism.
C What do you mean by Surfactants? Explain how are they useful in detergents.
D Give an account of HPLC with 2 applications.

Q5

(20 Marks) (5 Marks each)

- A Explain Complex reaction & precipitation reaction in Liq ammonia.
- B Explain application of colloids in pesticides.
- C Describe Gas chromatography (Principle & 2Applications).
- D Explain Intermediate compound theory for catalysts.

Q6

(20 Marks) (5 Marks each)

- A Explain origin of charge on colloids.
- B Give any 3 applications of UV spectroscopy.
- C What is importance of non aqueous solvents? Give Acid-base & Redox reactions in Liq SO₂.
- D Give preparation & properties of Malonic ester.
