

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

**SECTION-I**

**Q.1** Answer the following: (20)

a) Predict the product.



- b) Define Metamerism.
- c) What is functional group isomerism?
- d) Explain with example  $\text{SP}^3$  hybridisation in alkanes.
- e) Give structure and uses of acetone.
- f) What is crossed aldol condensation?
- g) Give structure and uses of Amphetamine.
- h) Give one application of Benzoin Condensation.
- i) What happens when alkenes are treated with Osmium tetroxide?
- j) What is  $\gamma$  - elimination reaction?

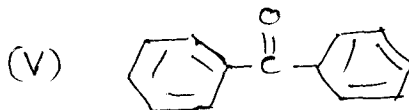
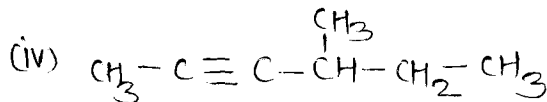
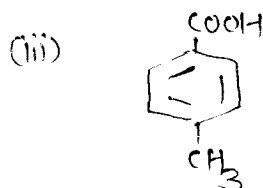
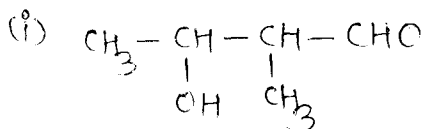
**Q.2** Answer any **TWO** of the following: (20)

- a) Give reaction, kinetics, stereochemistry and factors affecting rate of  $\text{S}_{\text{N}}2$  reaction.
- b) Explain addition of hydrogen halides to asymmetric alkenes in presence of peroxides with mechanism.
- c) Give structure orientation involved in elimination reaction.

**SECTION-II**

**Q.3** Answer any **SEVEN** of the following: (35)

- a) Write a short note on Ozonolysis.
- b) What happens when benzaldehyde reacts with acetic anhydride in presence of sulphuric acid?
- c) What is Cannizzaro reaction? Explain with mechanism.
- d) Write IUPAC names of the following compounds.



- e) Explain Diels- Alder reaction with suitable examples.
- f) Differentiate between  $\text{E}_1$  and  $\text{E}_2$  reactions.
- g) Write a short note on Tautomerism.
- h) Give qualitative test for identification of carboxylic acids.
- i) Give structure and uses of:
 

|                        |                   |                  |
|------------------------|-------------------|------------------|
| i) Lactic acid         | ii) Tartaric acid | iii) Citric acid |
| iv) Dimethyl phthalate | v) Salicylic acid |                  |