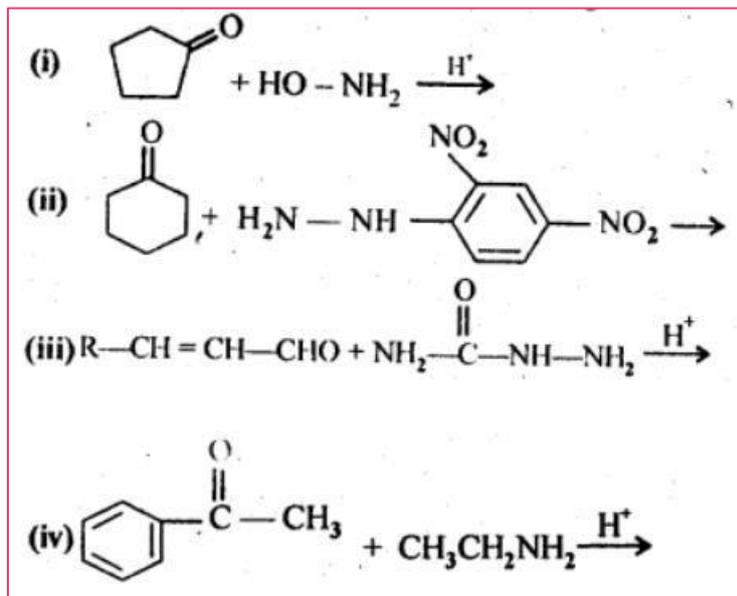




**Q.1.** Predict the product of following reactions.



(4 Marks)

**Q.2.** What is meant by the following terms? Give an example of the reaction in each case.

(i) Cyanohydrin

(ii) Acetal

(iii) Semicarbazone (3 Marks)

**Q.3.** Predict the product when cyclohexanecarbaldehyde reacts with following reagents:

(i)  $C_6H_5MgBr$  followed by  $H_3O^+$

(ii) Tollen's reagent. (2 Marks)

**Q.4.** An organic compound with the molecular formula  $C_9H_{10}O$  forms 2,4-DNP derivative, reduces Tollen's reagent, and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1,2-benzenedicarboxylic acid. Identify the compound. (3 marks)

**Q.5.** Give simple chemical tests to distinguish between the following pairs of compounds.

(i) Propanal and Propanone

(ii) Acetophenone and Benzophenone

(iii) Phenol and Benzoic acid

(3 Marks)

**Q.6.** How will you bring about the following conversions in not more than two steps?

(i) Propanone to Propene

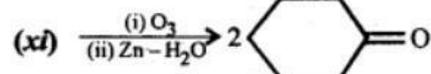
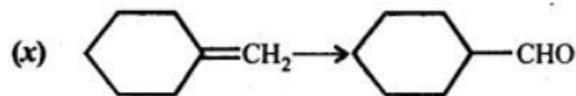
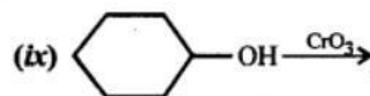
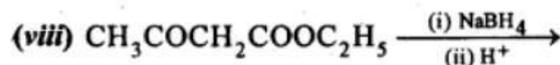
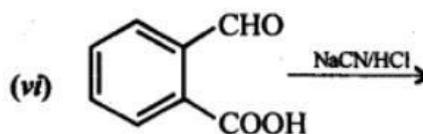
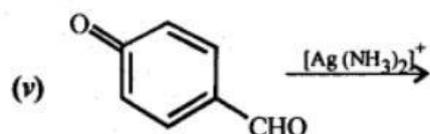
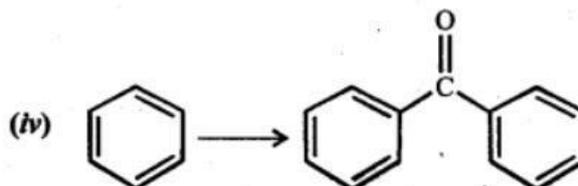
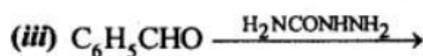
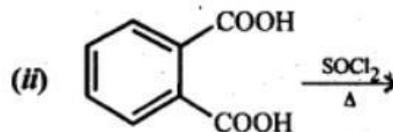
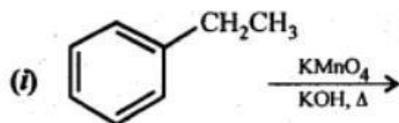


## SARVANSIR- CHEMISTRY FOR ALL

(ii) Benzoic acid to Benzaldehyde

(iii) Ethanol to 3-Hydroxybutanal (3 Marks)

Q.7. Complete each synthesis by giving missing starting material, reagent or products. (11 Marks)



Q.8. An organic compound contains 69.77% carbon, 11.63 % hydrogen and rest oxygen. The molecular mass of the compound is 86. It does not reduce Tollens' reagent but forms an addition compound with sodium hydrogensulphite and give positive iodoform test. On vigorous oxidation, it gives ethanoic and propanoic acid. Write the possible structure of the compound. (5 Marks)

Q.9. Write

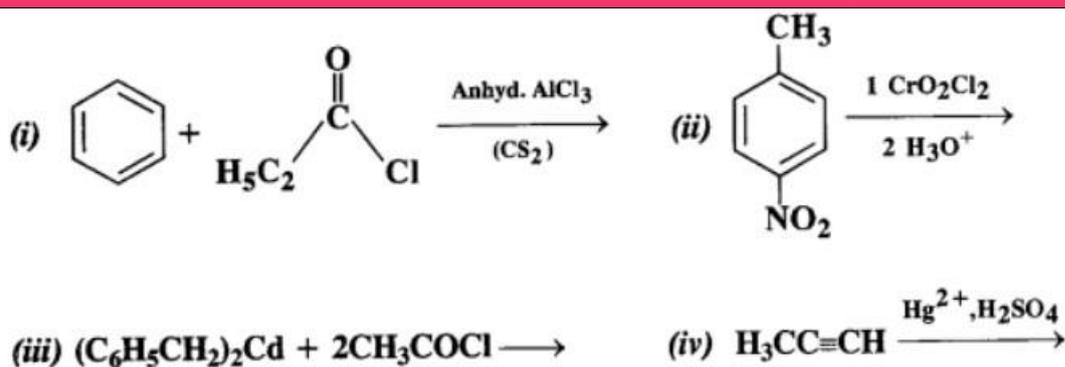
1. Etard Reaction
2. Stephen Reaction
3. HVZ Reaction.

(3 Marks)

Q.10. Write the structures of the products of the following reactions:

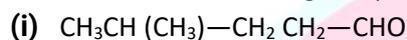


## SARVANSIR- CHEMISTRY FOR ALL



(4 Marks)

**Q.11.** Name the following compounds according to IUPAC system of nomenclature:



(4 MARKS)

**Q.12.** Give plausible explanation for each of the following:

(i) Cyclohexanone forms cyanohydrin in good yield but 2,2,3- trimethylcyclohexanone does not

(ii) There are two  $\text{—NH}_2$  groups in semicarbazide. However, only one is involved in the formation of semicarbazone.

(iii) During the preparation of esters from a carboxylic acid and an alcohol in the presence of an acid catalyst, the water or the ester should be removed as soon as it is formed.

(3 Marks)

**Q.13.** Although phenoxide ion has a greater number of resonating structures than carboxylate ion, carboxylic acid is a stronger acid than phenol. Why? (2 Marks)

Chemistry for all