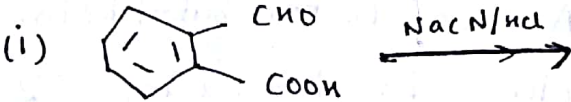
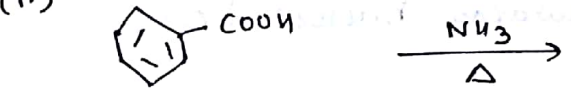


Test

25 Marks

1 hr

- Q(1) Define azeotropes. (1)
- Q(2) Draw structure of 4-methylpent-3-en-2-one. (1)
- Q(3) Write following reactions: (2)
- (a) Rosenmund reaction.
 - (b) Wolff-Kishner reduction.
- Q(4) (a) Arrange Acetaldehyde, Acetone, Di-tert-butyl ketone and methyl tert-butyl ketone in decreasing order of reactivity towards nucleophilic substitution reaction. (2)
- (b) Arrange Benzoic acid, 4-Nitrobenzoic acid, 3,4-Dinitrobenzoic acid, 4-methoxy benzoic acid in increasing order of acidity.

- 5 Explain non-ideal solution and their types. (2)
- 6 (a) Write a chemical test to distinguish Pentan-2-one and Pentan-3-one. (2)
- (b) Convert Benzene to m-Nitrobenzoic acid
- 7 Give reasons to following (3)
- (a) Aquatic species are more comfortable in cold water than in warm water.
- (b) To avoid bends scuba divers use air diluted with helium.
- (c) Cold drinks bottles are sealed under high pressures.
- 8 A 5% solution of sucrose is isotonic with 0.877% solution of X. Calculate molecular mass of X. (3)
- 9 (a) Complete the reaction (3)
- (i)  O=C1C=CC(=O)C=C1 >> [NaCN/HCl]
- (ii)  O=C(O)C1=CC=CC=C1 >> [NH3, \Delta]
- (b) Cyclohexanone forms cyanohydrin in good yield, but 2,2,6-trimethylcyclohexanone does not. Why?
- 10 Calculate the osmotic pressure exerted by a solution prepared by dissolving 1g of polymer of molar mass 185000 in 450 mL of water at 37°C. ($R = 0.08314 \text{ L bar K}^{-1} \text{ mol}^{-1}$). (3)

11 a) An organic compound with molecular formula $C_9H_{10}O$ ~~is~~ undergoes Cannizzaro reaction and reduces Tollens reagent. On vigorous oxidation it gives Benzene-1,2-dicarboxylic acid. Find structure of compound.

10) Write IUPAC name of $CH_3CH_2COCH(CH_2CH_5)CH_2CH_2Cl$.