

Aldehydes, Ketones and carboxylic acids.

Multiple choice questions (1 Mark)

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a. Propandane b) Pentan-3-one
c) Butanone **d) Butan-2-ol**

1. Write IUPAC name of Phthalaldehyde?
2. Write the structure of cyclic ketal.
3. Write the name of the product when ketones react with ethane-1,2 -diol in presence of dry HCl .
4. Write another name for the disproportionation reaction?
5. Write the number of products when a mixture of ethanal and propanal is reacted with dilute alkali?
6. Write structure of the product formed when carboxylic acid is heated with dehydrating agent like P_2O_5
7. Write the formula of a reducing agent, which can't reduce $-COOH$ group of carboxylic acid.

- i) Write Classification of aliphatic ketones with suitable example
- ii) What is the action of Grignard reagent on benzonitrile?
- iii) Carboxylic acids have higher boiling points than those of ethers .Give reason.
- iv) Explain Cannizzaro reaction with suitable examples.
- v) What is the action of following reagents on propanal? a.Sodium Bisulphite b.Hydrazine
- vi) Write the chemical reactions for the preparation of acid amide from the following.
 a.Carboxylic acid b. Acid chloride

i) What is the action of following reagents on ethanoic acid?
a) SOCl_2 / heat b) soda lime / heat c) P_2O_5 / heat

ii) Explain aldol condensation reaction of ethanal in detail.

iii) Write reactions for the following conversions.
a. Benzene to Benzaldehyde

b. Propanone to Propane

c. 4-Nitrobenzoic acid to Nitrobenzene

iv) Explain haloform reaction with suitable example.

Write chemical reaction to distinguish acetaldehyde from acetone

v) Write IUPAC name of mesityl oxide. What is the action of following reagents on acetaldehyde?

a. hydroxylamine b. acidified potassium dichromate

vi) Write chemical reactions to convert $-\text{COOH}$ group of acetic acid into following

a. CH_4 b. $\text{C}_2\text{H}_5\text{OH}$ c. CH_3COCl

Long answer questions. (4 marks)

i) Draw structure of salicylaldehyde.

Write reaction for preparation of acetophenone from benzoyl chloride.

Explain the acidic nature of carboxylic acids.

ii) Write reactions for the action of following reagents on p-chlorobenzaldehyde.

a) Ethane-1,2-diol in presence of dry HCl .

b) Tollen's reagent.

c) Phenyl hydrazine.

Write reagent for conversion of alkyl nitrile into aldehyde.

iii) What are aliphatic aldehydes? Complete the following sequence of reactions and write structures for A, B, C.

