



## CHEMISTRY

### BOOKS - OSWAAL PUBLICATION CHEMISTRY (KANNADA ENGLISH)

#### ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

##### Topic 1 Aldehydes Ketones And Carboxylic Acids Very Short Answer Type Questions

1. Mention the hybridised state of carbonyl carbon atom.



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2. Write the structure of maleic acid.



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3. Phenol does not react with sodium carbonate. Why?

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4. Write the IUPAC name of  $CH_3 - \underset{\substack{| \\ NH_2}}{CH} - CH_2 - CHO$

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5. Write the structure of 3-methyl butanal.

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6. Write the structure of 4-chloropentan-2-one.

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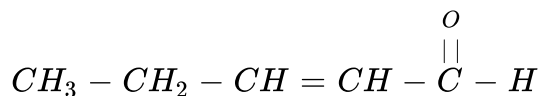
7. Write the structure of p-methyl benzaldehyde molecule.

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8. Draw the structure of the compound named 4-methyl pent-3-en-2-one.

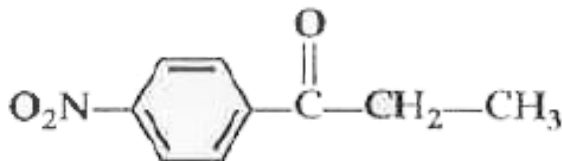
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9. Write IUPAC name of:



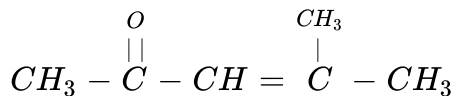
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10. Write the IUPAC name of the compound



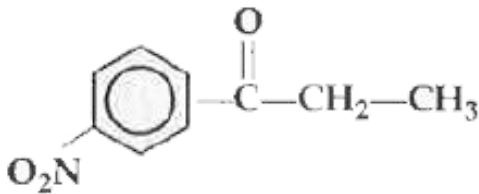
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11. Write the IUPAC name of compound:



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12. Write the IUPAC name of



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13. Draw the structural formula of 1-phenylpropan-1-one molecule.

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## Topic 1 Aldehydes Ketones And Carboxylic Acids Short Answer Type Questions

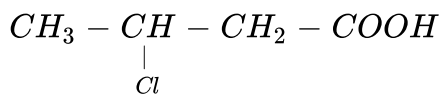
1. Acetic acid is a weaker acid than chloroacetic acid. Give reasons.

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2. Explain the relative acidity of ethanoic acid and methanoic acid.

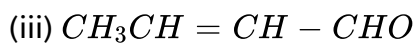
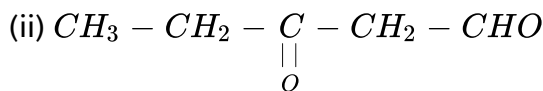
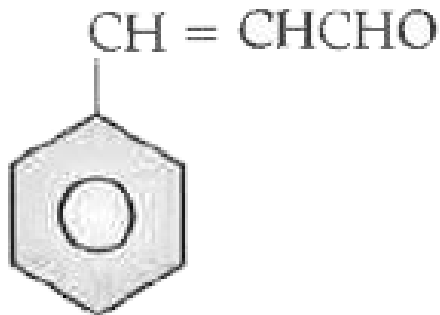
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3. Write the IUPAC name of



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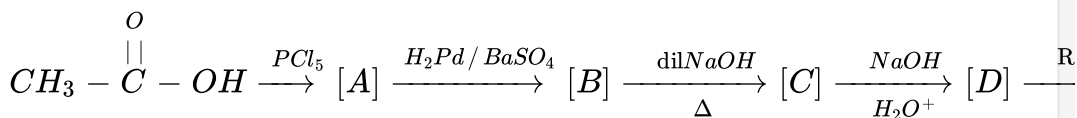
4. Give IUPAC names of the following compounds:



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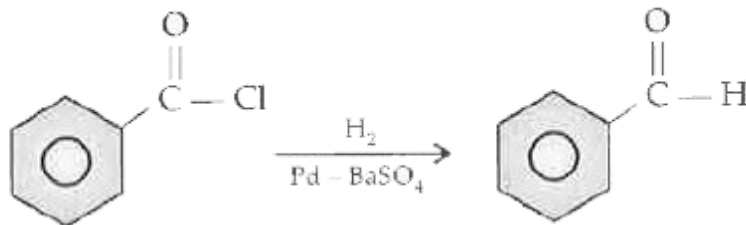
## Topic 1 Aldehydes Ketones And Carboxylic Acids Long Answer Type Questions I

1. Identify A,B,C,D and E in the following sequency reaction.



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## Topic 2 Methods Of Preparation Of Aldehydes And Ketones Very Short Answer Type Questions



1.

Name the above reaction.

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2. A  $\frac{\text{dry}}{\text{distil}}$  acetone + calcium carbonate. Identify A.

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3. Name the products obtained when benzaldehyde is made to undergo Cannizzaro's reaction using a concentrated solution of potassium

hydroxide.

Give the equation of the reaction.

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4. Name the products formed when ethanoic acid is heated with ethanol in the presence of conc.  $H_2SO_4$ ?

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5. What is the reducing agent used in Clemmensen's reduction?

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6. Out of  $CH_3CH_2COCH_2CH_3$  and  $CH_3CH_2CH_2COCH_3$  which gives iodoform test.

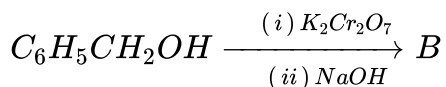
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7. What is Tollen's reagent? Write one usefulness of this reagent.

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8. Identify B in the following reaction:



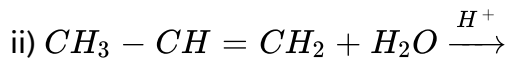
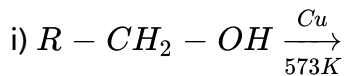
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## Topic 2 Methods Of Preparation Of Aldehydes And Ketones Short Answer Type Questions

1. Explain Hoffmann's bromamide degradation reaction for the preparation of methanamine.

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2. Complete the following reaction:



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3. How do you convert ethanoic acid to methane? Write equation.



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4. How do you convert ethane nitrile into ethanoic acid?



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5. Explain with an example, Clemmensen's reduction.



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6. Explain Reimer-Tiemann reaction.

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7. Write the equation for the following reactions:

Benzaldehyde is treated with concentrated sodium hydroxide solution.

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8. Explain cannizzaro's reaction taking benzaldehyde as an example.

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9. How is benzaldehyde converted into Cinnamic acid? Give the equation.

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10. With an example explain the following:

(i) Clemmensen's reduction

(ii) Kolbe's reaction.

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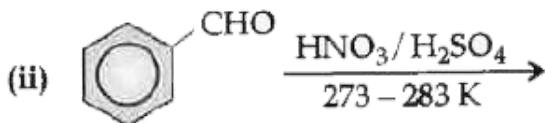
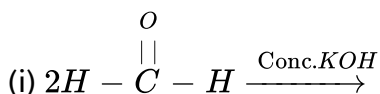
11. Give simple chemical test to distinguish between the following pairs of compounds:

(i) Ethanal and propanal

(ii) Benzoic acid and phenol.

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12. Complete the following reactions:



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13. How will you bring about the following conversion:

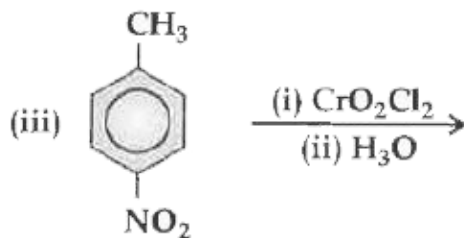
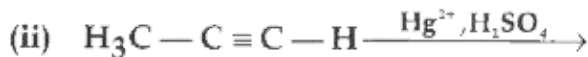
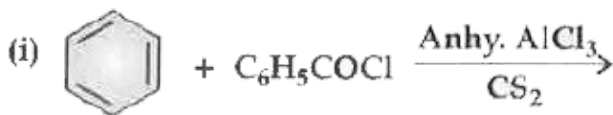
(i) Propanone to propane

(ii) Benzoyl chloride to benzaldehyde.

(iii) Ethanal to but-2-enal.

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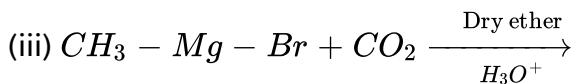
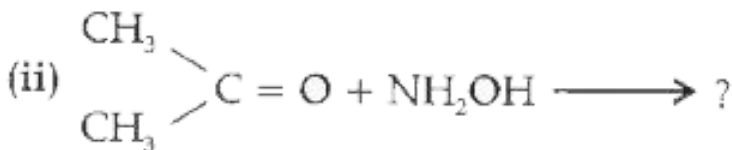
14. Write the structure of the main products of following reactions:



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## Topic 2 Methods Of Preparation Of Aldehydes And Ketones Long Answer Type Questions I

1. a. Write the organic compound formed in the following equations:



b. Explain HVZ (Hell Voldhard-Zelinsky) reaction with equation.

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2. How do you convert benzoic acid to benzamide?

Write the reaction.

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3. a. Explain the laboratory method of preparation of p-bromoacetanilide from acetanilide.

b. Mention a general test for the following:

(i) Carbohydrates

(ii) Oils and fats.

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4. How does benzaldehyde react with a concentrated solution of sodium hydroxide? Give the equation and name the reaction.

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5. Explain with equations how to convert:

(i) Aldehyde containing no  $\alpha$ -hydrogen to a mixture of sodium salt of the carboxylic acid and alcohol.

(ii) Ketone into hydrocarbon.

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6. How are following formed?

(i) Cinnamic acid form benzaldehyde.

(ii) Acetyl chloride from acetic acid.

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7. How do carbonyl compounds react with HCN. Give mechanism of the reaction.

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## Topic 2 Methods Of Preparation Of Aldehydes And Ketones Long Answer Type Questions Ii

1. (i) How will you convert the following:

a. Propanone to propan -2-ol

b. Ethanal to 2-hydroxy propanoic acid c. Toluene to benzoic acid



(ii) Distinguish the following pairs of compounds:

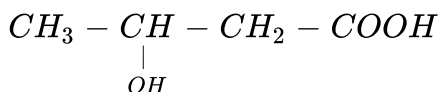
a. Pentan-2-one and pentan-3-one

b. Ethanal and propanal

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### Topic 3 Methods Of Preparation Of Carboxylic Acid Properties And Uses Very Short Answer Type Questions

1. Write IUPAC name of



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2. Complete the following reaction:

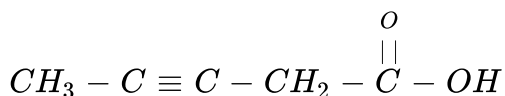


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3. Illustrate the decarboxylation reaction giving a suitable example.

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4. Write the IUPAC name of



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### Topic 3 Methods Of Preparation Of Carboxylic Acid Properties And Uses Short Answer Type Questions

1. Although phenoxide ion has more number of resonating structures than carboxylate ion in carboxylic acids is a stronger acid than phenol. Give two reasons.

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2. How will you carry out the following conversions ?

(i) Acetylene to acetic acid

(ii) Toluene to m-nitro benzoic acid.

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### Topic 3 Methods Of Preparation Of Carboxylic Acid Properties And Uses Long Answer Type Questions I

1. Why is Benzoic acid is a weaker acid than formic acid?

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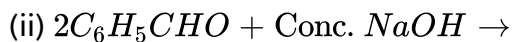
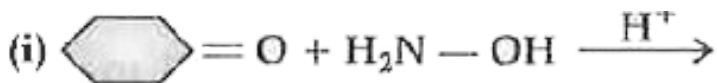
### Topic 3 Methods Of Preparation Of Carboxylic Acid Properties And Uses Long Answer Type Questions Ii

1. A ketone  $A(C_4H_8O)$  which undergoes a haloform reaction gives compound B on reduction. B on heating with sulphuric acid gives a

compound C which forms mono-ozonide D. D on hydrolysis in presence of zinc dust gives only acetaldehyde E. Identify A,B,C,D and E. Write the reaction involved.

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2. a. Write the product of the following reactions:



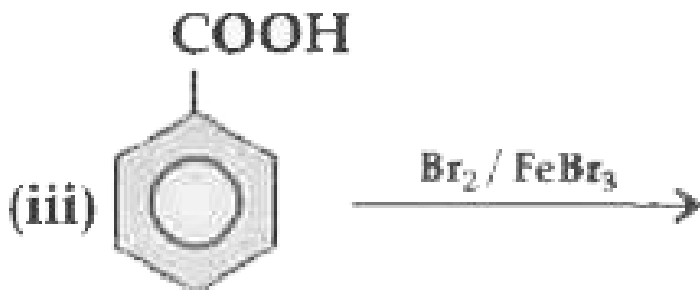
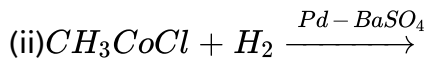
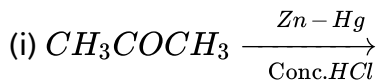
b. Give simple chemical tests of distinguish between the following pairs of compounds:

(i) Benzaldehyde and benzoic acid

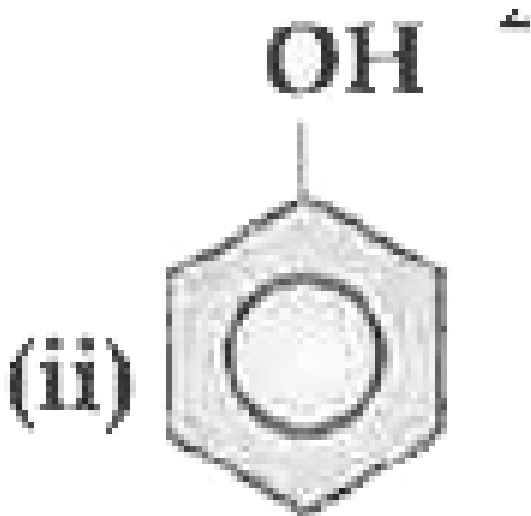
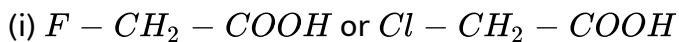
(ii) Propanol and propane.

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3. a. Predict the products



B. Which acid of each pair shown here would you expect to be stronger?

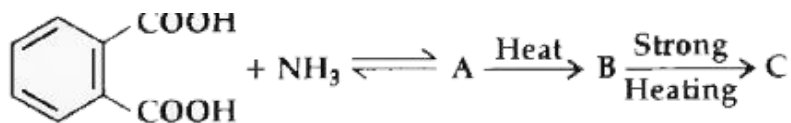


OR

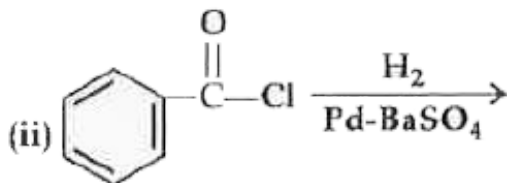
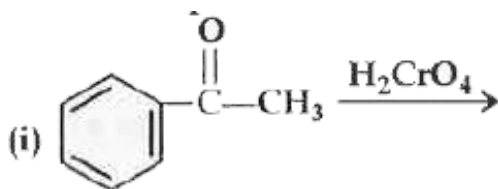


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4. a. Identify A,B and C in the following sequence of reactions:



b. Predict the products of the following reactions:



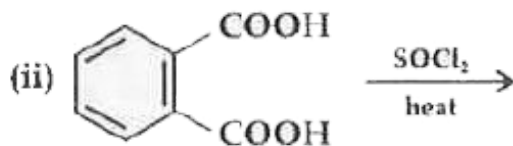
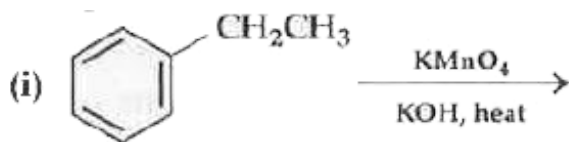
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5. a. Describe the following giving linked chemical equations:

(i) Cannizzaro reaction,

(ii) Decarboxylation.

b. Complete the following chemical equations:



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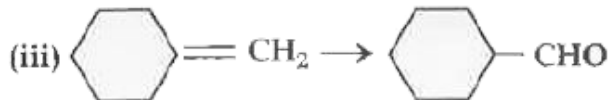
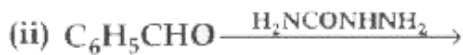
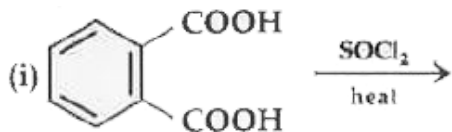
6. a. Give chemical tests to distinguish between the following:

(i) Benzoic acid and ethyl benzoate,

(ii) Benzaldehyde and acetophenone

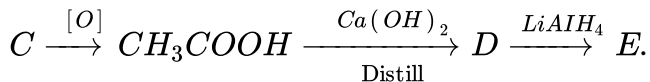
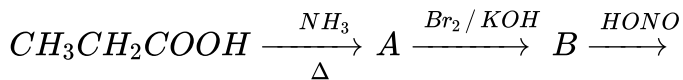
b. Complete each synthesis by giving missing reagents or products in the

following:



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7. Identify A to E in the following sequences of operations:



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