CHEMISTRY

BOOKS - A N EXCEL PUBLICATION

ALDEHYDE, KETONES AND CARBOXYLIC ACIDS

Question Bank

1. Write the structures of the following compounds

(i) α-Methoxypropionaldehyde

Watch Video Solution

2. Write the structures of the following compounds (ii) 3-Hydroxybutanal

Watch Video Solution

3. Write the structures of the following compounds (iii) 2-Hydroxycyclopentane carbaldehyde

Watch Video Solution

4. Write the structures of the following compounds (iv) 4-Oxopentanal

Watch Video Solution

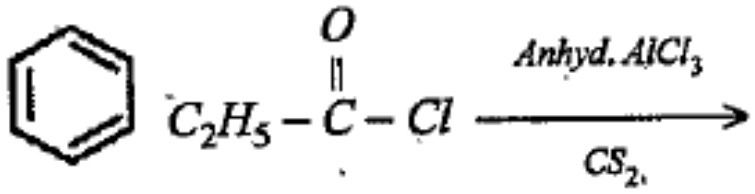
5. Write the structures of the following compounds (v) Di-sec-butyl ketone

Watch Video Solution

6. Write the structures of the following compounds (vi) 4-Fluoroacetophenone

Watch Video Solution

7. Write the structues of the product of the following reactons. (i)



Watch Video Solution

8. Write the structues of te product of the following reactons. (ii) `(C_6H_5CH_2)_2Cd+2Ch_3COCl gives

Watch Video Solution

9. Write the structues of te product of the following reactons. (iii)

$$CH_3 - C \equiv CH \xrightarrow{Hg^{2+}\, H_2SO_4}$$

Watch Video Solution

10. Arrange the following compounds in the increasing order of their boiling points.

$$CH_3CHO, CH_3CH_2OH, CH_3OCH_3, CH_3CH_2CH_3$$

Watch Video Solution

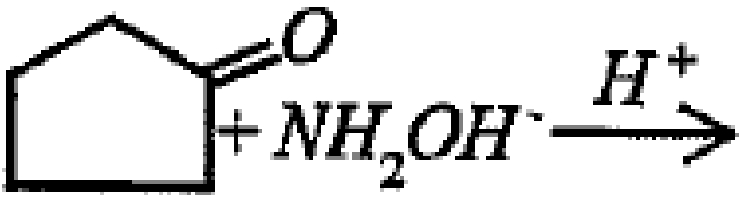
11. Arrange the following compounds in increasing order of their reactivity in nucleophilic addition reactions. (i) Ethanal, propanal, propanone, butanone

Watch Video Solution

12. Arrange the following compounds in increasing order of their reactivity in nucleophilic addition reactions. (ii) Benzaldehyde, P-Tolualdehyde, P-Nitrobenzaldehyde Acetophenone

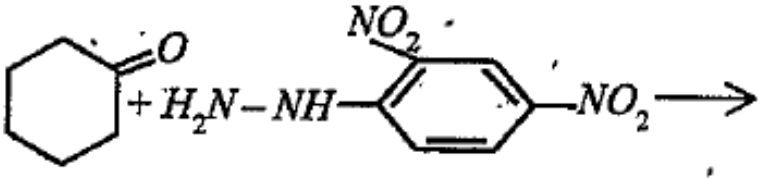
Watch Video Solution

13. Predict the products of the following reactions.



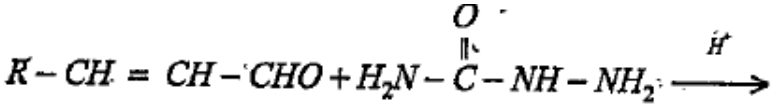
Watch Video Solution

14. Predict the products of the following reactions.



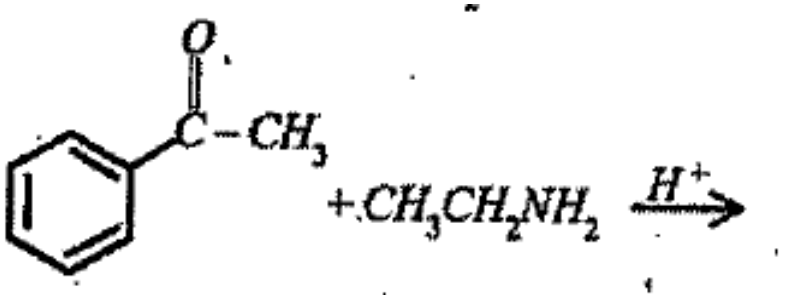
Watch Video Solution

15. Predict the products of the following reactions.



Watch Video Solution

16. Predict the products of the following reactions.



Watch Video Solution

17. Give the IUPAC names of the following. (i)

$PhCH_2CH_2COOH$

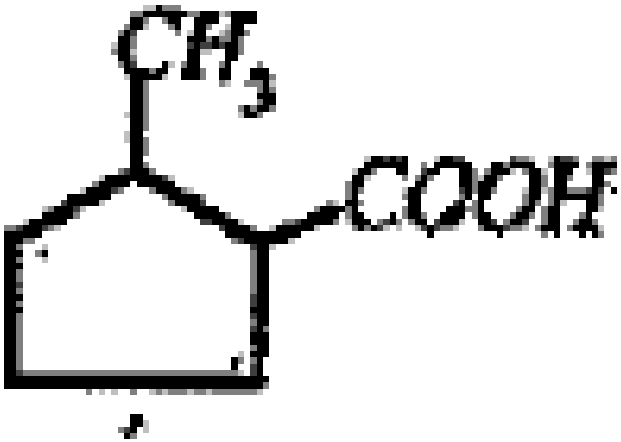
Watch Video Solution

18. Give the IUPAC names of the following. (ii)

$(CH_3)_2 = CHCOOH$

Watch Video Solution

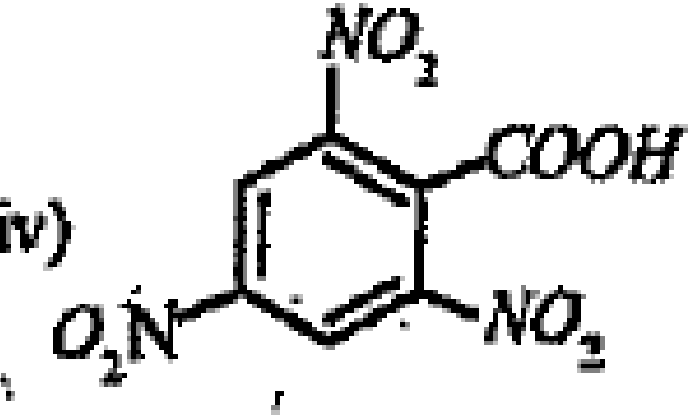
19. Give the IUPAC names of the following. (iii)



Watch Video Solution

20. Give the IUPAC names of the following. (iii)

(iv)



Watch Video Solution

21. Show how each of the following compounds can be converted to benzoic acid. (i) Ethylbenzene

Watch Video Solution

22. Show how each of the following compounds can be converted to benzoic acid. (ii) Acetophenone

Watch Video Solution

23. Show how each of the following compounds can be converted to benzoic acid. (iii) Bromobenzene

Watch Video Solution

24. Show how each of the following compounds can be converted to benzoic acid. (iv) Phenylethene (styrene)

Watch Video Solution

25. Which acid of each pair shown here would you expect to be stronger? (i) CH_3COOH, FCH_2COOH

Watch Video Solution

26. Which acid of each pair shown here would you expect to be stronger? (ii) $FCH_2COOH, ClCH_2COOH$

Watch Video Solution

27. Which acid of each pair shown here would you expect to be stronger? (iii) $FCH_2CH_2CH_2COOH$ or CH_3CHFCH_2COOH

Watch Video Solution

28. Which acid of each pair shown here would you expect to be stronger? (i) CH_3COOH, FCH_2COOH

Watch Video Solution

29. Aldehydes and ketones are organic compounds containing carbonyl group. Write a chemical reaction to distinguish between aldehydes and ketones.

Watch Video Solution

30. Aldehydes and ketones can be subjected to Clemmensen reduction and Wolf-Kishner reduction. Name the reagents used in both cases.

Watch Video Solution

31. How will you make the following conversions?

Ethanoic acid to ethanol.

Watch Video Solution

32. How will you make the following conversions?

Propanoic acid to 2-chloropropanoic acid.

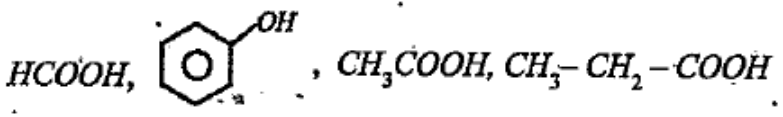
Watch Video Solution

33. How will you make the following conversions?

Toluene to benzoic acid.

Watch Video Solution

34. Following are a group of compounds showing acidic behaviour:



Give the IUPAC names of these compounds.

Watch Video Solution

35. Following are a group of compounds showing acidic behaviour:does not contain carboxylic

group, still it is acidic. Why?

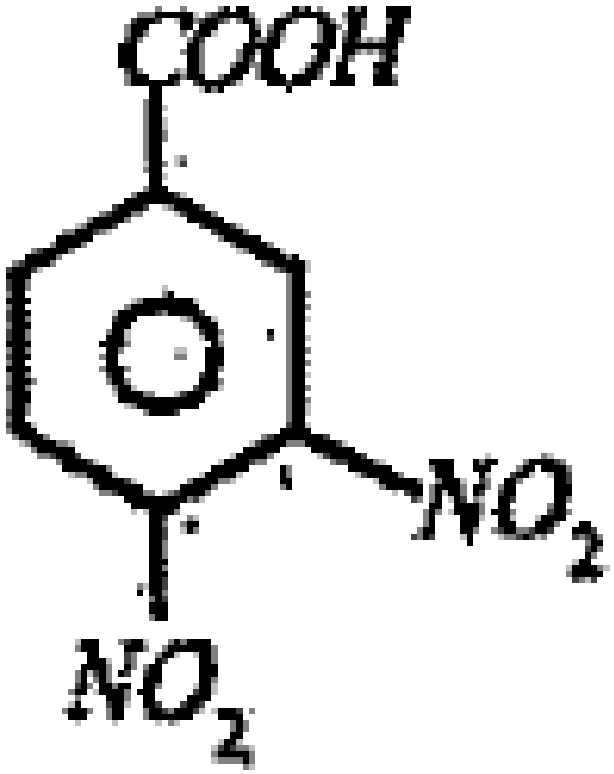
Watch Video Solution

36. Following are a group of compounds showing acidic behaviour: Phenols are less acidic than carboxylic acids. Why?

Watch Video Solution

37. Following are a group of compounds showing acidic behaviour: Formic acid is stronger than acetic acid. Why?

Watch Video Solution

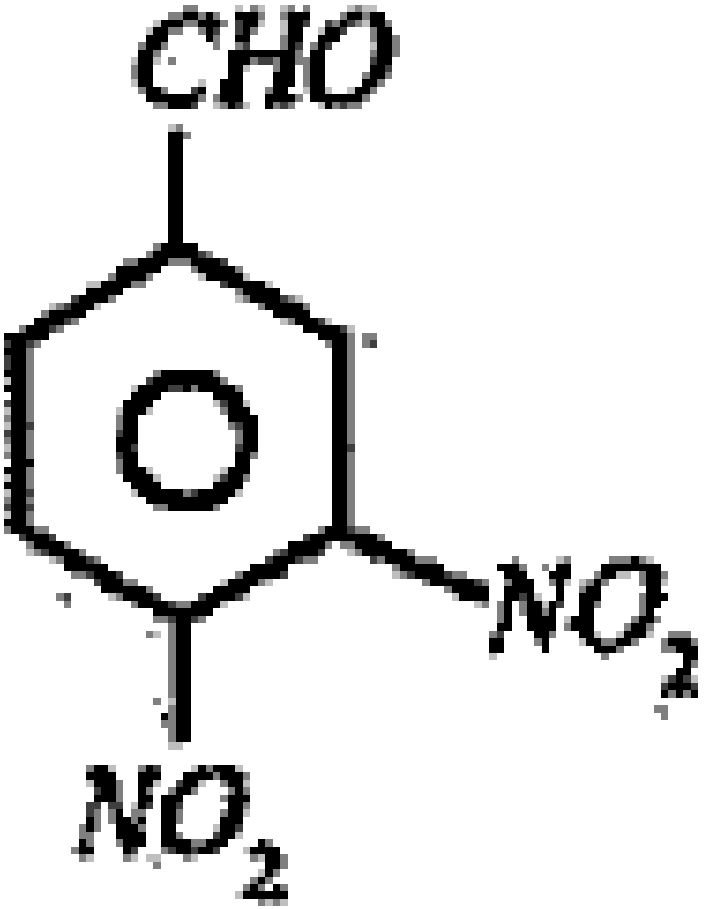


38.

is an aromatic acid. What is it IUPAC name?

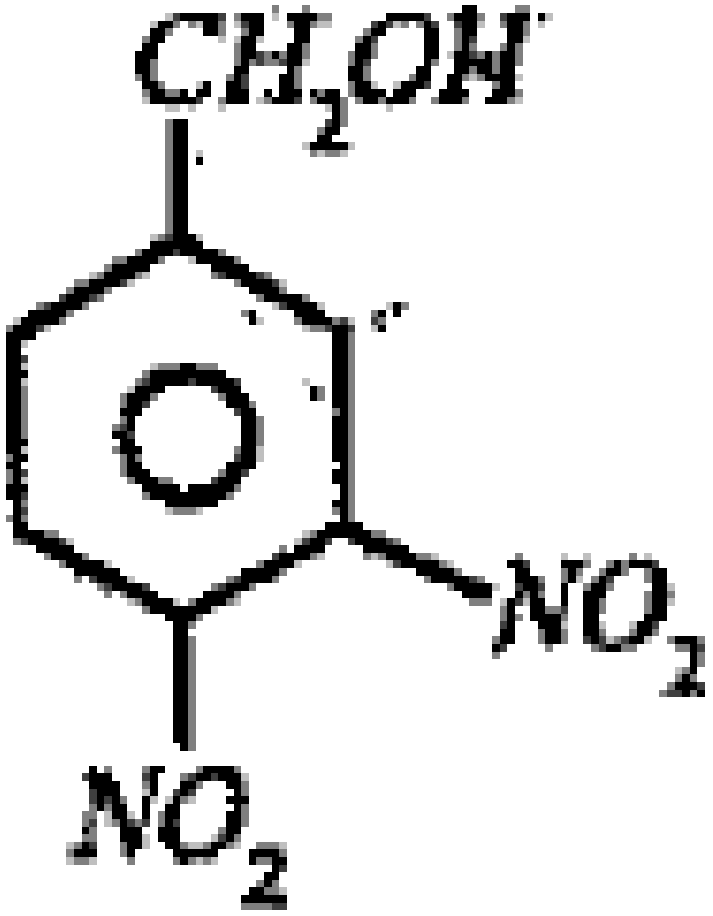
Watch Video Solution

39. Explain the conversion of the 3,4-dinitrobenzoic acid to the following.



Watch Video Solution

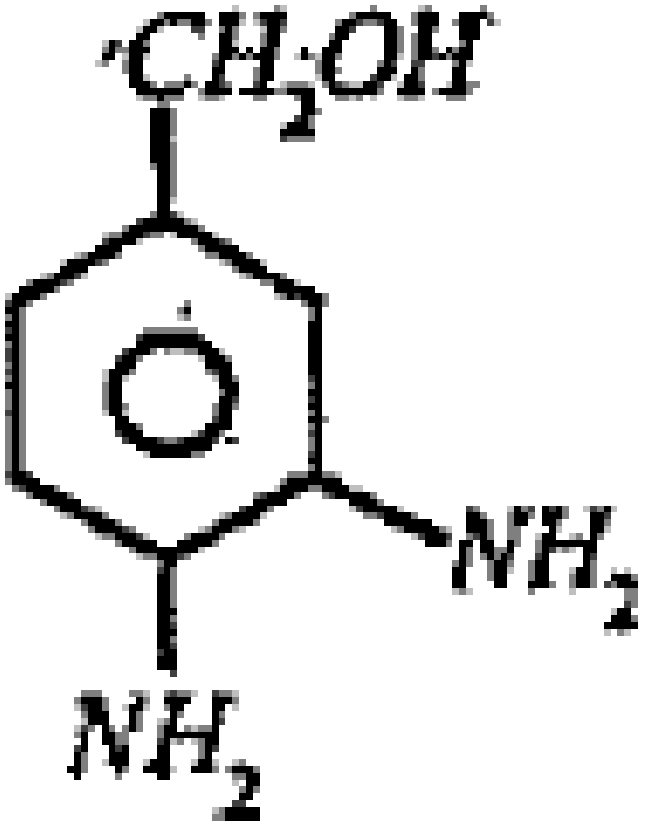
40. Explain the conversion of the above acid to the following.



`

View Text Solution

41. write the conversion of the 3,4-dinirtobenzoic acid to the following.



Watch Video Solution

Watch Video Solution

42. Aldehydes resemble ketones in many respects. Give the reason for their resemblance.

Watch Video Solution

43. Aldehydes resemble ketones in many respects. Give a reaction in which aldehydes resemble ketones.

Watch Video Solution

44. Write a test to distinguish between aldehydes and ketones.

Watch Video Solution

45. Aldehydes resemble ketones in many respects. What is Cannizzaro reaction?

Watch Video Solution

46. Which named reaction is used to reduce CH_3COCl to CH_3CHO?

Watch Video Solution

47. Aldehydes and ketones undergo reactions due to the presence of α-hydrogen atom. Write the name of the reaction of aldehyde which takes place only because of the presence of α-hydrogen atom.

Watch Video Solution

48. How will you bring about the above reaction?

View Text Solution

49. $CH_2ClCOOH$ is a stronger acid than CH_3COOH. Why?

Watch Video Solution

50. How will you convert CH_3COOH to $CH_2ClCOOH$?

Watch Video Solution

51. Complete the following. Write down the structures of A, B and C. (i)

$$CH_3 - CH_2 - CHO \xrightarrow{KMnO_4} A$$

Watch Video Solution

52. Complete the following. Write down the structure of B. (i)

$$CH_3 - CH_2 - CO - CH_3 \xrightarrow{Z \in camalgam / HCl} B$$

Watch Video Solution

53. Complete the following. Write down the structure of C. (i)

$$CH_3 - CH_2 - CH_2 - COOH \xrightarrow{Bromine / RedP} C$$

Watch Video Solution

54. Write down the IUPAC names of A, B and C.

View Text Solution

55. Explain the following reactions. Cannizzaro reaction

Watch Video Solution

56. Explain the following :

Esterification

Watch Video Solution

57. Suggest a method of preparation of benzaldehyde from toluene.

Watch Video Solution

58. Aldehydes and ketones differ in their chemical reactions. How do they with the following.?

Tollens's reagent

Watch Video Solution

59. Aldehydes and ketones differ in their chemical reactions. How do they with the following.? Alcohol

Watch Video Solution

60. How will you convert propanoic acid into the following componds? Ethane

Watch Video Solution

61. How will you convert propanoic acid into the following compond? Butane

Watch Video Solution

62. Among formaldehyde, acetaldehyde, benzaldehyde and formic acid, which compounds undergo Cannzzaro reaction? Give reason.

Watch Video Solution

63. Explain the following :

Esterification

Watch Video Solution

64. Thionyl chloride is preferred to as the reagent to prepare acid chlorides. Why?

Watch Video Solution

65. Write the chemical reaction to effect the transformation of sodium acetate to ethane.

Watch Video Solution

66. Which is not the isomer of $CH_3 - CH_2 - O - CH_2 - CH_3$?

a)$CH_3 - O - CH_2 - CH_2 - CH_3$

b)$CH_3 - CH_2 - CH_2 - CH_2 - OH$

c)$CH_3 - CH_2 - CO - CH_3$

d)$CH_3 - CH(OH) - CH_2 - CH_3$

Watch Video Solution

67. Write the IUPAC names of the $HOOC - CH_2\_COOH$ compound.

Watch Video Solution

68. Aldol condensation reaction is a special reaction of aldehydes. (i) What is aldol condensation reactions?

Watch Video Solution

69. Aldol condensation reaction is a special reaction of aldehydes. (ii) Write the structural formula of aldol formed from ethanal.

Watch Video Solution

70. Write simple chemical tests and observations used to distinguish between the following compounds. (i) Propanal and propanone

Watch Video Solution

71. Write simple chemical tests and observations used to distinguish between the following compounds. (ii) Phenol and benzoic acid

Watch Video Solution

72. Write the names of reagents used to bring about the following transformations. (i) $C_6H_5COCl \rightarrow C_6H_5CHO$

Watch Video Solution

73. Write the names of reagents used to bring about the following transformations. (ii) $CH_3COOH \rightarrow ClCH_2 - COOH$

Watch Video Solution

74. Methanal (HCHO) is an aldehyde having no α hydrogen atom. What are the products formed when methanal is treated with strong KOH solution?

Watch Video Solution

75. How are the following conversions archieved?

(i) Benzoyl chloride $[C_6H_5COCl]$ to benzaldehyde $(C_6H_5 - CHO)$

Watch Video Solution

76. How are the following conversions archieved?

(ii) Acetic acid (CH_3COOH) to chloro acetic acid $(CH_2Cl - COOH)$

Watch Video Solution

77. How are the following conversions archieved?

(iii) Benzene to Benzaldehyde

Watch Video Solution

78. Aldehydes, Ketones and Acids contain $\rangle C = O$ group. Name the product obtained by the reaction

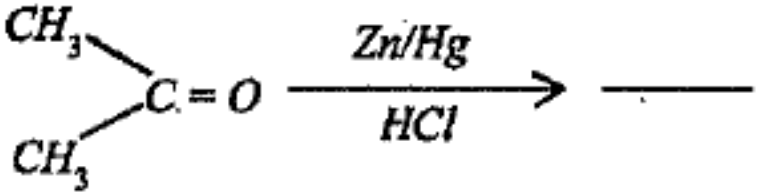
between Acetic acid and Ethanol.

Watch Video Solution

79. Write a test to distinguish between aldehydes and ketones.

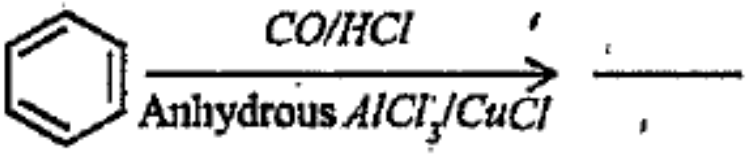
Watch Video Solution

80. Two chemical reactions are given below: (1) Identify the products of each reaction.



Watch Video Solution

81. Two chemical reactions are given below: (2) Give the name of each reaction.



Watch Video Solution

82. Explain aldol condensation taking $CH_3 - CHO$ as example.

Watch Video Solution

83. Write the named reactions involved in the following conversions: (i)

$$CH_3 - CO_Cl \xrightarrow{H_2 / Pd - BaSO_4} CH_3 - CHO$$

Watch Video Solution

84. Write the named reactions involved in the following conversions: (ii)

$$2HCHO \xrightarrow{NaOH} HCOONa + CH_3 - OH$$

Watch Video Solution

85. How are the following conversions achieved? (i)

$$CH_3 - CN \rightarrow CH_3 - COOH$$

Watch Video Solution

86. How are the following conversions achieved?

(ii)

` (##ANE_PKE_CHE_XII_C12_E02_058_Q01.png" width="80%">

View Text Solution

87. Aldehydes, Ketones and Carboxylic acids are Carbonyl compounds. Aldehydes differ from Ketones in their oxidation reaction. Illustrate with one example.

Watch Video Solution

88. How will you prepare benzaldehyde by Gatterman-Koch reaction?

Watch Video Solution

89. Write the reactions of carboxylic acid with the following reagents. (Write the chemical equations)

(i) Thionyl chlorides `(SOCl_2)

Watch Video Solution

90. Write the names of reagents used to bring about the following transformations. (ii) $CH_3COOH \rightarrow ClCH_2 - COOH$

Watch Video Solution

91. Write the reactions of carboxylic acid with the following reagents. (Write the chemical equations) (iii) Lithium Aluminium hydride $(LiAlH_4)$ ether.

Watch Video Solution

92. Write a test to distinguish between aldehydes and ketones.

Watch Video Solution

93. How will you prepare benzaldehyde by Etard's reaction?

Watch Video Solution

94. How will you bring about the following conversions? (Write the chemical equations) (i)

Ethonal to ethene

Watch Video Solution

95. How will you bring about the following conversions? (Write the chemical equations) (ii) Benzamide

View Text Solution

96. How will you bring about the following conversions? (Write the chemical equations) (iii) benzoic acid to Benzaldehyde

Watch Video Solution

97. Aldehydes, Ketones are the compounds having >C=O group. Choose the IUPAC name of the compound $CH_3CH = CH = CHO$

A. Propen-1-al

B. But-2-en-1-al

C. Butanal

D. But-2-en-2-al

Answer: A

Watch Video Solution

Watch Video Solution

98. Complete the reaction:

$2HCHO + ConKOH \xrightarrow{\Delta}$

Watch Video Solution

99. Complete the reaction: $CH_3CHO \xrightarrow{dil.NaOH}$

Watch Video Solution

100. Complete the reaction:

$CH_3CHO + H_2N - NH_2 \rightarrow$

Watch Video Solution

101. Complete the reaction: $C_6H_5COCH_3 \xrightarrow[HCl]{Zn/Hg}$

Watch Video Solution

102. Aldehydes, Ketones and acids contain >C=O group. Choose the IUPAC name of the compound $(CH_3)_2CHCOOH$

A. Butanoic acid

B. Ethanoic acid

C. 2-methyl propanoic acid

D. Propanoic acid

Answer: A

Watch Video Solution

103. Complete the reaction:

$$CH_3CH_2COOH \xrightarrow{LiAlH_4 / Ether}$$

Watch Video Solution

104. Complete the reaction:

$$CH_3CH_2COOH + SOCl_2 \rightarrow$$

Watch Video Solution

105. Complete the reaction:

$$CH_3CH_2COOH \xrightarrow{Br_2 / RedP}$$

Watch Video Solution

106. Complete the reaction:

$$CH_3CH_2COOH + CH_3OH^{H^+`}$$

Watch Video Solution

107. The product obtained when benzene is treated with carbon monoxide and hydrogen chloride in presence of anhydrous $AlCl_3$ is

A. Chlorobenzene

B. Phenol

C. Benzaldehyde

D. Benzoic acid

Answer: A

Watch Video Solution

Watch Video Solution

108. How will you carry out the following conversion?

$CH_3CH_2COOH \rightarrow CH_3CH_2CH_2OH$

Watch Video Solution

109. How will you carry out the following conversions? (iv)

$CH_3COOH \rightarrow CH_3CO - O - CO - CH_3$

(acetic anhydride)

Watch Video Solution

110. Explain the following :

Esterification

Watch Video Solution

111. Explain the Tollen's test.

Watch Video Solution

112. Explain the HVZ reaction.

Watch Video Solution

113. Explain the Decarboxylation of Carboxylic acid.

114. Which among the following reduces Tollen's reagent?

A. Methanal

B. Propanone

C. Benzophenone

D. Acetophenone

Answer: A

Watch Video Solution

115. Since both aldehydes and ketones possess carbonyl functional group, they undergo similar chemical reactions. (i) Explain the structure of carbonyl group.

Watch Video Solution

116. Since both aldehydes and ketones possess carbonyl functional group, they undergo similar

chemical reactions. (ii) Explain Aldol condensation with an example.

Watch Video Solution

117. Which among the following does not give red precipitate with Fehling's solution?

A. Ethanal

B. Propanal

C. Butanal

D. Benzaldehyde

Answer: D

Watch Video Solution

118. How will you bring about the following conversions? (i) Toluene into Benzaldehyde

Watch Video Solution

119. How will you bring about the following conversions? (ii) Benzoic acid to Benzamide

Watch Video Solution

120. Explain Cannizaro reaction with an example.

Watch Video Solution

121. Acid chlorides can be use to prepare aldehydes and ketones. How is acetyl chloride converted to acetaldehyde?

Watch Video Solution

122. Acid chlorides can be use to prepare aldehydes . What is the above reaction known as?

Watch Video Solution

123. Acid chlorides can be use to prepare aldehydes and ketones. Can you prepare acetone from acetyl chloride? Explain.

Watch Video Solution

124. Identify the product Y in each of the following.

(i) $CH_3CHO + HCN \rightarrow X \xrightarrow{hydrolysis} Y$

Watch Video Solution

125. Identify the product Y in each of the following.

$$CH_3CN + CH_3MgBr \rightarrow X \xrightarrow{H_2O} Y$$

Watch Video Solution

126. Identify the product Y in each of the following.

(iii) $CH_3CH_2MgBr + CO_2 \xrightarrow{ether} X \xrightarrow{hydrolysis} Y$

Watch Video Solution

127. Identify the product Y in each of the following.

(iii) $CH_3COOH \xrightarrow{(i)\,NH_3} X \xrightarrow{heat} Y$

Watch Video Solution

128. Aldehydes and ketones undergo addition reaction followed by elimination of water with certain reagents. Give the structure and names of two such reagents.

Watch Video Solution

129. Aldehydes and ketones undergo addition reaction followed by elimination of water with certain reagents. Write equation for the reaction of any one of them with propanone.

Watch Video Solution

130. Aldehydes and ketones undergo addition reaction followed by elimination of water with certain reagents. What happens when benzaldehyde is heated with zinc amalgam and conc. HCl?

Watch Video Solution

131. Give reasons for the following observations. Aldehydes and ketones undergo nucleophilic

addition reactions.

Watch Video Solution

132. Give reasons for the following observations.

CH_3COOH is weaker than HCOOH

Watch Video Solution

133. Complete the following table by writing the name of the reagent, organic products and name

of the reaction wherever required.

Sl. No.	Reactant	Reagents	Organic product	Name of reaction
1.	$C_6H_5CONH_2$	--------	$C_6H_5NH_2$	--------
2.	$C_6H_5NH_2$	$C_6H_5COCl/NaOH$	--------	--------
3.	$CH_3CH_2NH_2$	--------	CH_3CH_2NC	--------
4.	$C_6H_5N_2Cl$	$C_6H_5NH_2$	--------	--------
5.	$C_6H_5N_2Cl$	Cu/HBr	--------	--------

Watch Video Solution

134. Carboxylic acids can be prepared using Grignard reagents. Explain the preparation acid using a suitable Grignard reagent.

Watch Video Solution

135. Carboxylic acids can be prepared using Grignard reagents. Why is benzoic acid more acidic than ethanoic acid?

Watch Video Solution

136. Carboxylic acids can be prepared using Grignard reagents. Why is carboxylic acid stronger acid than phenol?

Watch Video Solution

137. Which among the following give aldol condensation? HCHO

Watch Video Solution

138. Which among the following give aldol condensation? $\mathbb{C}l_3 - CHO$

Watch Video Solution

139. Which among the following give aldol condensation? $CH_3 - CHO$

Watch Video Solution