CHEMISTRY

BOOKS - KALYANI CHEMISTRY (ENGLISH)

ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

INTEXT QUESTIONS

1. What is the type of hybridization of carbonyl carbon?

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2. Write the IUPAC names of

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3. Write the IUPAC names of

$CH_2OH.CH_2CHO$

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4. Write the IUPAC names of

$$CH_3CH = CH - \overset{\overset{O}{||}}{C} - CH_3$$

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5. Write the structural formula of

Chain isomer of $CH_3CH_2(C)H_2CHO$

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6. Write the structural formula of

Position isomer of $CH_3COCH_2CH_2CH_3$

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7. Write the structural formula of

Functional isomer of $CH_3CH_2CH_2CHO$

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8. How many carbonyl isomers will $C_5H_{10}O$ have? Give their structures and IUPAC names

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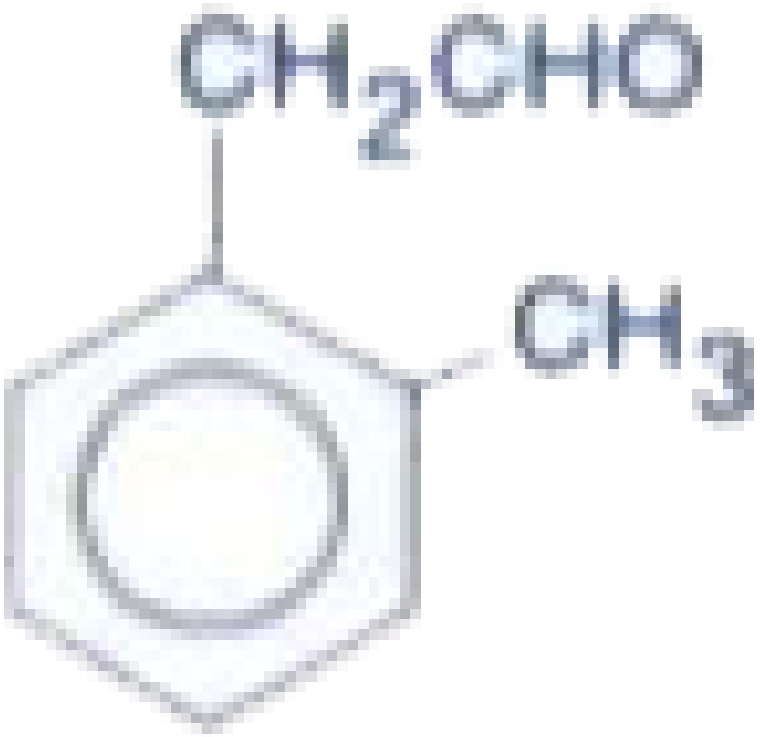
9. Write the IUPAC names of



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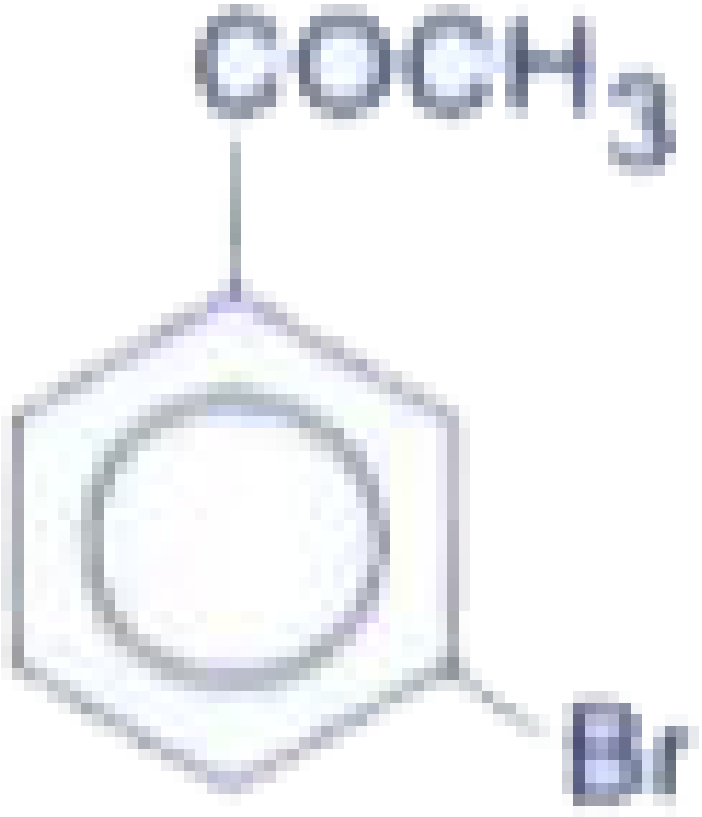
10. Write the IUPAC names of



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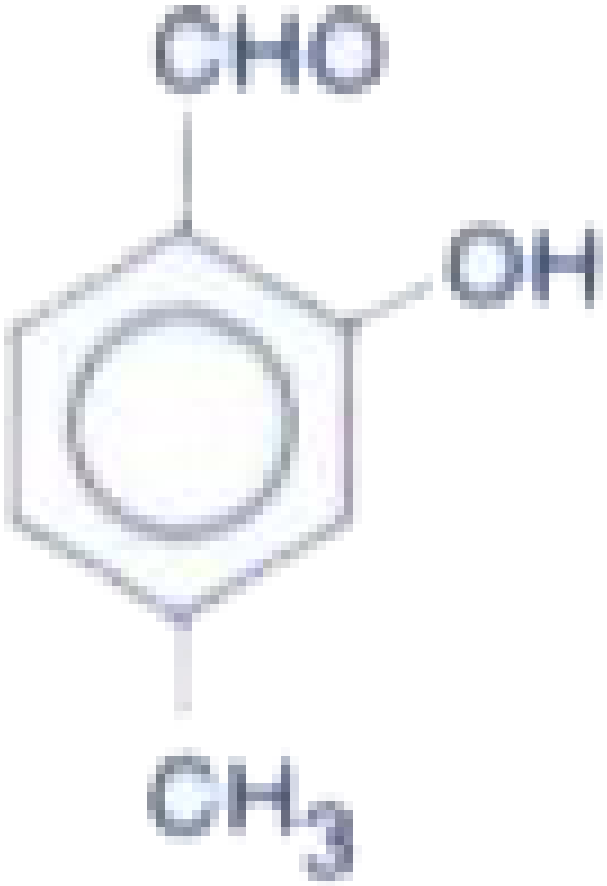

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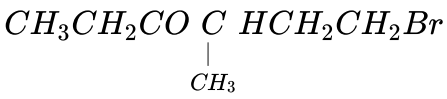

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13. Write the IUPAC names of

$(CH_3)_3CCOCH_3$

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14. Write the structure of the following:

Dibenzyl ketone

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15. Write the structure of the following:

(p-Bromophenyl) ethanal

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16. Write the structure of the following:

Ethyl-sec.butyl ketone

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17. Write the common and I.U.P.A.C. names of the following compounds:

$(CH_3)_2CHCHO$

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18. Write the common and I.U.P.A.C. names of the following compounds:

$(CH_3)_2C = CHCOCH_3$

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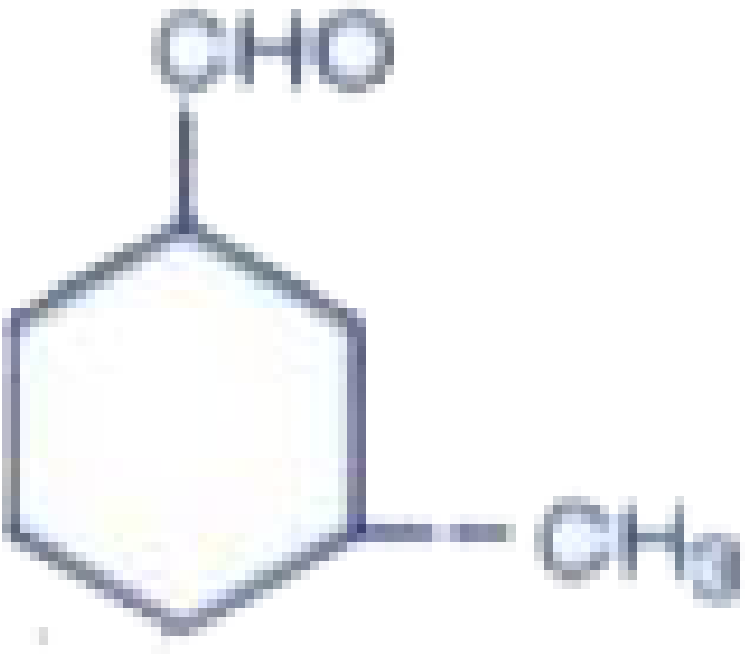
19. Write the common and I.U.P.A.C. names of the following compounds:



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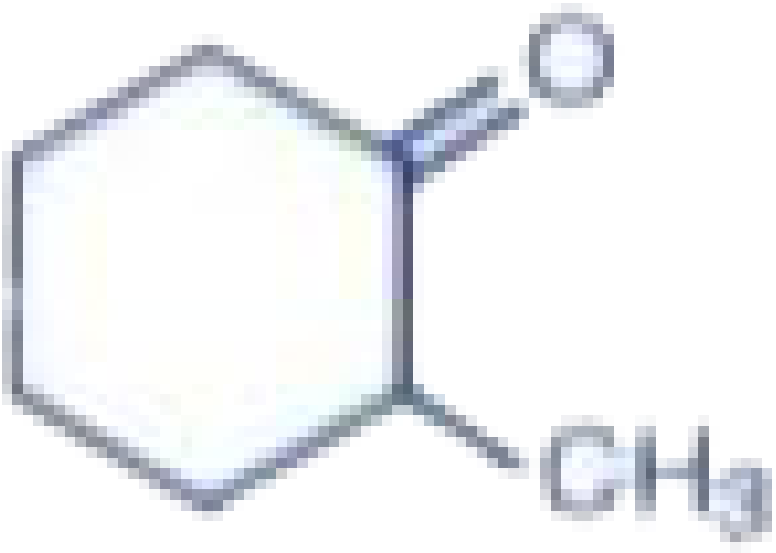

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21. Write the common and I.U.P.A.C. names of the following compounds:

$$(CH_3)_2CH\overset{\overset{O}{||}}{C}CH(CH_3)_2$$

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22. Write the common and I.U.P.A.C. names of the following compounds:

$CH_3CH = CHCHO$

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23. Draw the structures of the following compounds:

p-Nitropropiophenone

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24. Draw the structures of the following compounds:

p-methylbenzaldehyde

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25. Draw the structures of the following compounds:

p, p-Dihydroxybenzophenone

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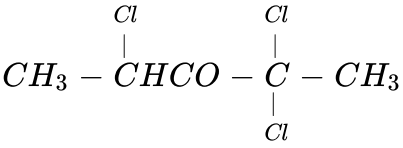
26. Give the IUPAC names of the following compounds :



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27. Give the IUPAC names of the following compounds :

$CH_3CH(CH_3)CH_2CH_2CHO$

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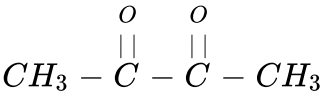
28. Give the IUPAC names of the following compounds :



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29. Give the IUPAC names of the following compounds :

$CH_3CH_2COCH_2C(CH_3)_3$

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30. Give the IUPAC names of the following compounds :

$$CH_3CH_3 - \underset{\underset{CHO}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2CH_3$$

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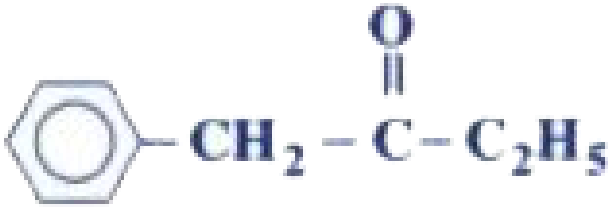
31. Give the IUPAC names of the following compounds :



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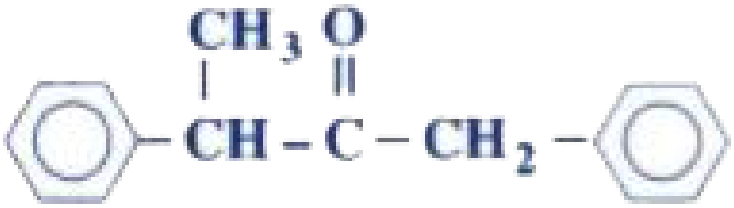
32. Give the IUPAC names of the following compounds :



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33. Name an alkene which on reductive ozonolysis gives only acetone.

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34. How is salicylaldehyde prepared from phenol ?

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35. Name the main products in the following reactions:

Calcium acetate is distilled.

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36. Name the main products in the following reactions:

2-Butene reacts with O_3 in presence of Zn-dust and H_2O

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37. Give chemical equations for the synthesis of the following compounds, starting with cyclopentane, C_5H_{10}, alcohols of three or fewer C's, HCHO and inorganic reagents.

Cyclopentanecarbaldehyde

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38. Give chemical equations for the synthesis of the following compounds, starting with cyclopentane, C_5H_{10}, alcohols of three or fewer C's, HCHO and inorganic reagents.

Pentaoe-1,5-diol

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39. Write the structure of the product X :

$$PhCH_2CH_2COCl + H_2 \xrightarrow[\text{S or quinoline}]{Pd/C} X.$$

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40. Write structures for X and Y in the following reactions:

$$CH_3CH_2CH(CH_3)COCl \xrightarrow{LBAH} X$$

$$CH_3CH_2CH(CH_3)COCl \xrightarrow{LiAlH_4} Y$$

where LBAH is lithium tri-t-butoxyaluminium hydride. LBAH is a less active reducing agent than $LiAlH_4$ and does not reduce aldehydes to alcohols.

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41. Arrange the following in the increasing order of boiling points:

(i) Acetaldehyde (ii) Acetic acid

(iii) Ethyl alcohol (iv) CH_3OCH_3 (v) $CH_3CH_2CH_3$

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42. Write structural formulae and IUPAC names of carbonyl compounds with molecular formula C_3H_6O. Which out of these will be more reactive towards nucleophilic additions?

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43. Arrange the following in increasing order of reactivity :

$HCHO$, CH_3CHO AND C_6H_5CHO

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44. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

acetaldehyde ?

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45. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

acetone ?

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46. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

Acetophenone ?

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47. Predict the product of reaction of

(i) formaldehyde with ammonia.

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48. Predict the product of reaction of

acetone with $KMnO_4$.

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49. Predict the product of reaction of

acetone with Tollen's reagent.

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50. Predict the product of reaction of

sulfonation with benzaldehyde.

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51. Predict the product of reaction of

ozonolysis of ethylene.

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52. Arrange the following in order of decreasing boiling point (i) Propan-1-ol (ii) propanal (ill) propanone (iv) Propane.

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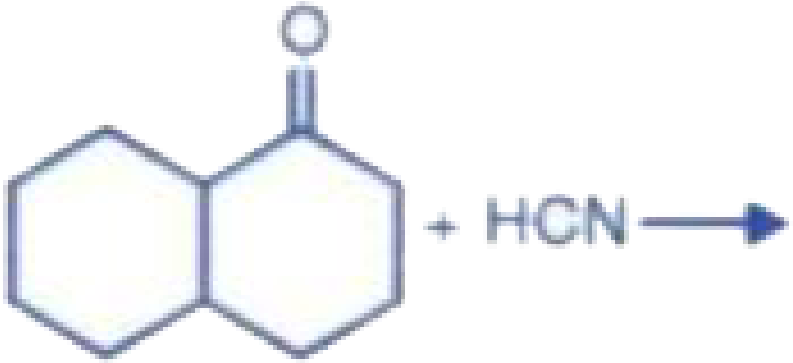
53. Complete the following reaction.



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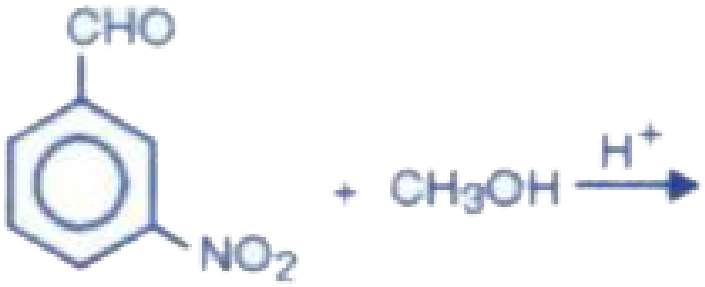
54. Complete the following reaction.



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55. Give IUPAC names of the following:

$ClCH_2COOH$

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56. Give IUPAC names of the following:

$O_2N.\,CH_2CH_2COOH$

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57. Give IUPAC names of the following:

$(CH_3)_3C.CH_2COOH$

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58. Give IUPAC names of the following:

$O=CHCH_2CH_2CH_2CH_2COOH$

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59. Give IUPAC names of the following:

$HOCH_2CH_2CHBrCOOH$

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60. Give IUPAC names of the following:

$CH_3CH_2COCH_2COOH$

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61. Give IUPAC names of the following:

$CH_3CH_2CH(CHO)CH_2COOH$

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62. Give IUPAC names of the following:

$PhCH_2CH_2COOH$

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63. Give IUPAC names of the following:

Watch Video Solution

64. Give IUPAC names of the following:

$$CH_2 = \underset{\substack{| \\ CH_2 \\ CH_3}}{C} - COOH$$

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65. Give IUPAC names of tartaric acid, citric acid, and methacrylic acid.

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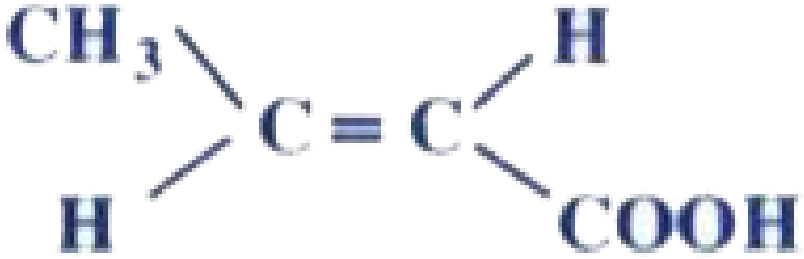
66. Give the common names of the following acids:



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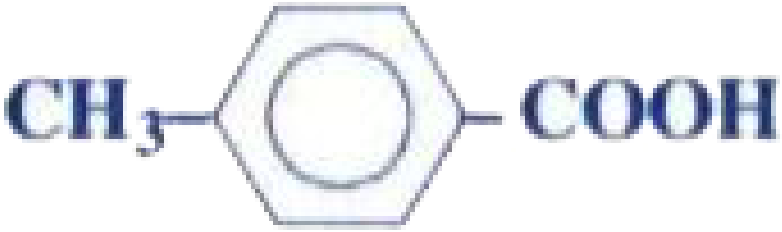
67. Give the common names of the following acids:



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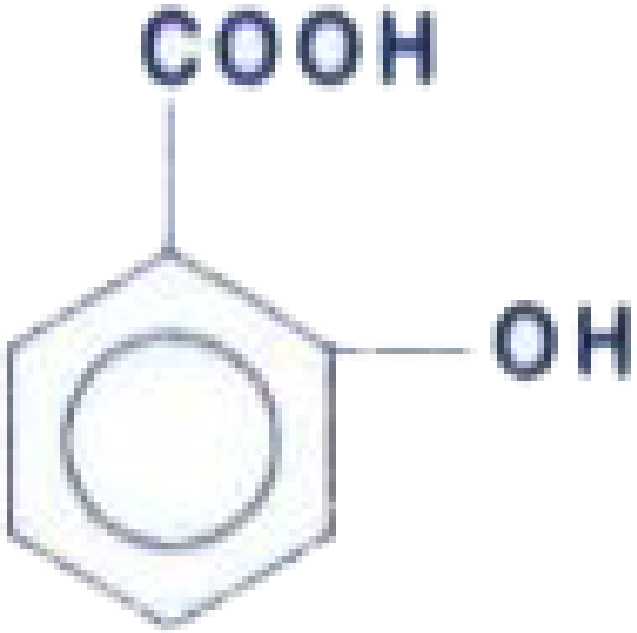
68. Give the common names of the following acids:



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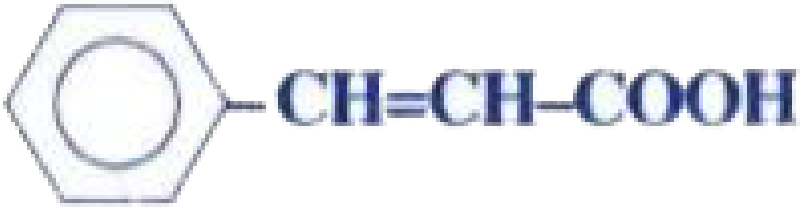

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70. Give the common names of the following acids:

$$CH_3 - \overset{O}{\overset{||}{C}} - \overset{O}{\overset{||}{C}} - OH$$

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71. Give the common names of the following acids:

$C_6H_5.CHOHCOOH$

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72. Give the derived name, as a derivative of acetic acid, of the following acids :

$(CH_3)_2C(OH)COOH$

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73. Give the derived name, as a derivative of acetic acid, of the following acids :

$(CH_3)_3CCOOH$

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74. Give the derived name, as a derivative of acetic acid, of the following acids :

$PhCH_2COOH$

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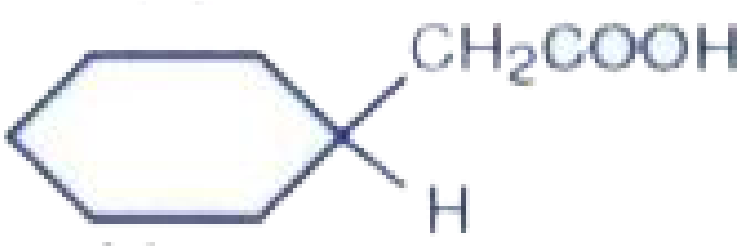
75. Give the derived name, as a derivative of acetic acid, of the following acids :



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76. Write the structural formulae of the following :

Benzene-1, 4-dicarboxylic acid

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77. Write the structural formulae of the following :

3-Bromo-4-phenylpentanoic acid

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78. Write the structural formulae of the following :

Caproic acid.

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79. Arrange the following compounds in increasing order of boiling points :

(i) C_3H_8 (ii) C_2H_5OH (iii) CH_3CHO (iv) CH_3COOH

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80. Why acetic acid in the vapour state has a molecular weight of 120 instead of 60 ?

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81. Why boiling and melting points of carboxylic acids are higher than those of corresponding alcohols ?

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82. Why only acids with five or fewer carbons are water soluble but many with six or more carbons dissolve in alcohols ?

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83. Which out of the following is : (a) the weakest acid (b) the strongest acid ?

(i) C_2H_5OH (ii) CH_3COOH (iii) C_6H_5OH (iv) H_2O

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84. Arrange the followsing in the increasing order of acid strengths:

(i) Fluoroacetic acid (ii) Chloroacetic acid (iii) Acetic acid (iv) Formic acid (v) Propionic acid.

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85. Arrange the following acids in the decreasing order of acid strength:

(i) Benzoic acid (ii) o-Chlorobenzoic acid (iii) m-Chlorobenzoic acid (iv) p-Chlorobenzoic acid.

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86. How is benzoic acid converted to

Benzyl chloride

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87. How is benzoic acid converted to

Benzyl alcohol

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88. How is benzoic acid converted to

m-nitrobenzoic acid

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89. How is benzoic acid converted to

Benzoic anhydride

Watch Video Solution

90. How is benzoic acid converted to

Aniline

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91. How is benzoic acid converted to

Benzaldehyde

Watch Video Solution

92. How is benzoic acid converted to

m-Nitrobenzyl alcohol.

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93. How would you convert the following into benzoic acid?

Toluene

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94. How would you convert the following into benzoic acid?

Benzyl alcohol

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95. How would you convert the following into benzoic acid?

Benzonitrile

Watch Video Solution

96. How would you convert the following into benzoic acid?

Propylbenzene

Watch Video Solution

97. How would you convert the following into benzoic acid?

Benzotrichloride

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98. Convert Propanoic acid into

Lactic acid

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99. Convert Propanoic acid into

α -alanine (2-Aminopropanoic acid)

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100. Convert Propanoic acid into

Dicarboxylic acid

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101. Convert Propanoic acid into

Propenoic acid.

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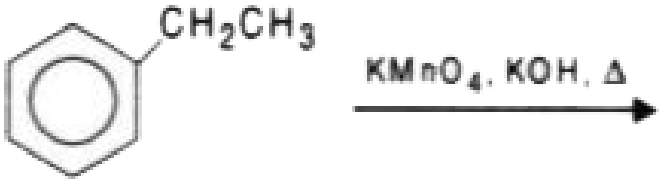
102. Predict the the organic product of the following reactions:



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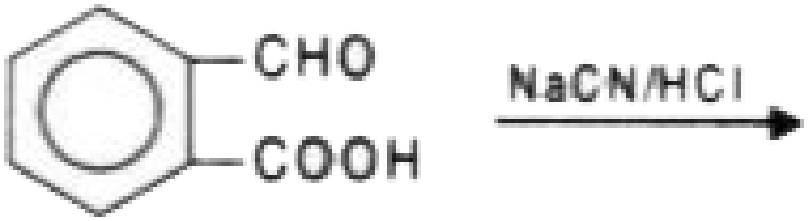

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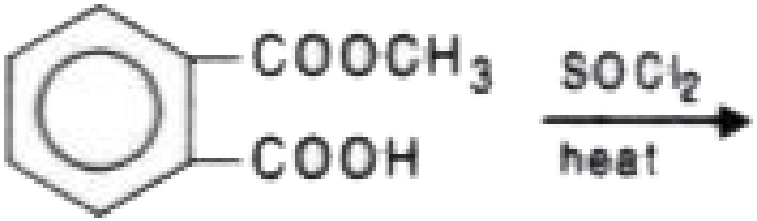

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105. Convert benzene into the following

m-Nitrobenzoic acid

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106. Convert benzene into the following

p-Nitrobenzoic acid.

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107. Convert benzene into the following

Phenylacetic acid (use inorganic and organic reagents having not more than one carbon)

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108. How will you bring about the following transformations?

Benzyl alcohol to phenylacetic acid

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109. How will you bring about the following transformations?

p-Methylacetophenone to benzene-1, 4-dicarboxylic acid (terephthalic acid)

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110. How will you bring about the following transformations?

Cyclo-hexene to hexane-1,6-dioic acid.

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111. What is the type of hybridization of carbonyl carbon?

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112. Write the IUPAC names of

Watch Video Solution

113. Write the IUPAC names of

$CH_2OH.CH_2CHO$

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114. Write the IUPAC names of

$$CH_3CH = CH - \overset{\overset{O}{||}}{C} - CH_3$$

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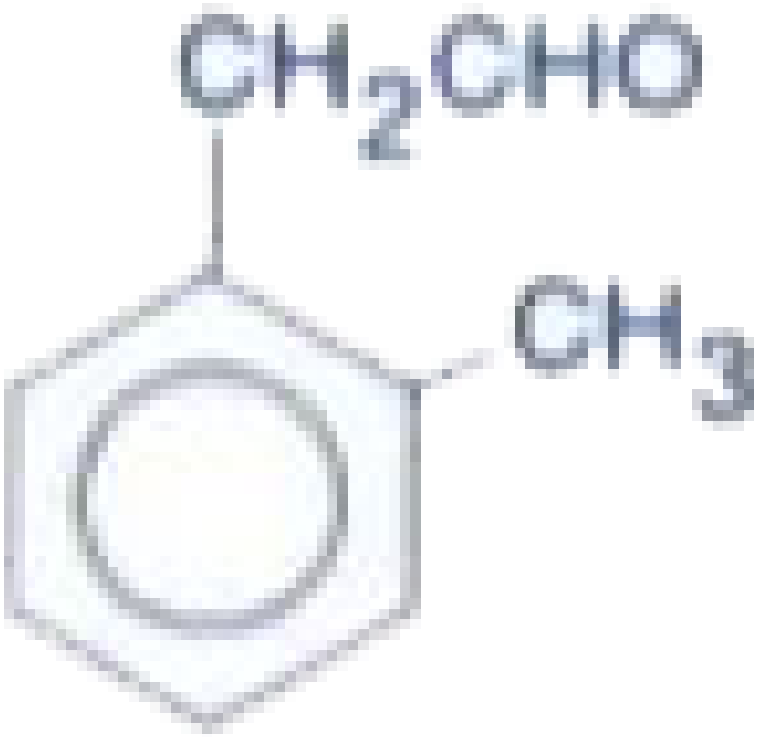

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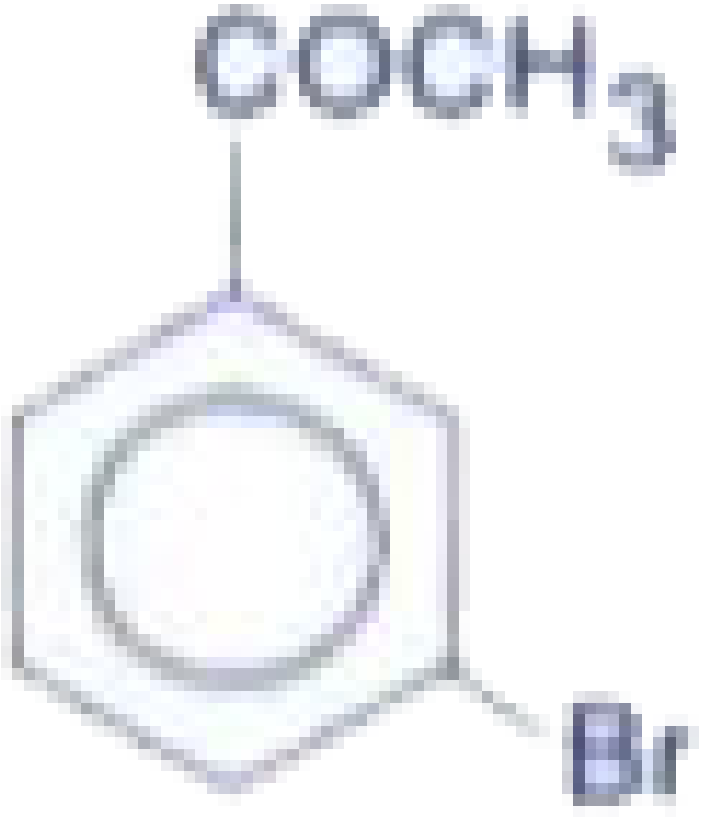
120. Write the IUPAC names of



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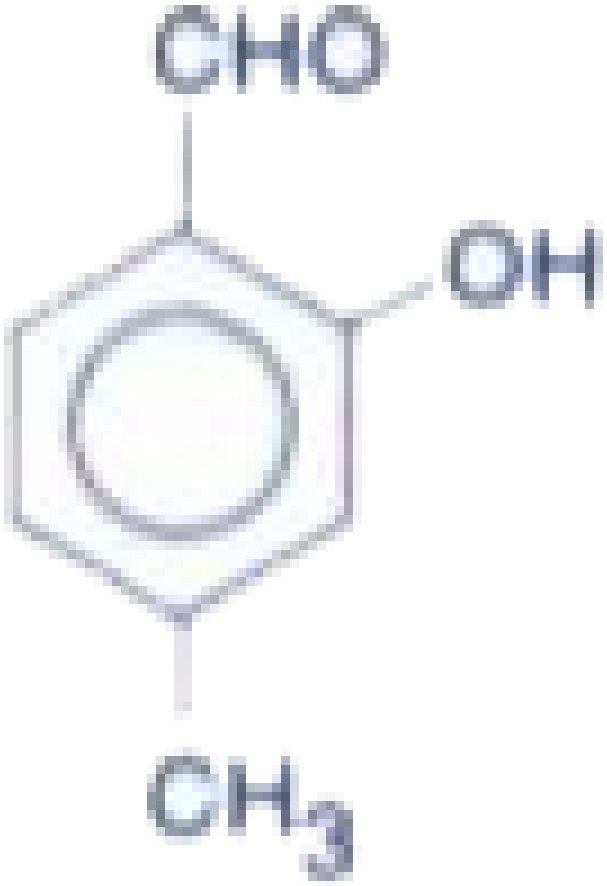

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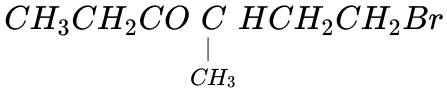
122. Write the IUPAC names of



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$(CH_3)_3CCOCH_3$

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124. Write the structure of the following:

Dibenzyl ketone

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125. Write the structure of the following:

(p-Bromophenyl) ethanal

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126. Write the structure of the following:

Ethyl-sec.butyl ketone

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127. Write the common and I.U.P.A.C. names of the following compounds:

$(CH_3)_2CHCHO$

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128. Write the common and I.U.P.A.C. names of the following compounds:

$(CH_3)_2C = CHCOCH_3$

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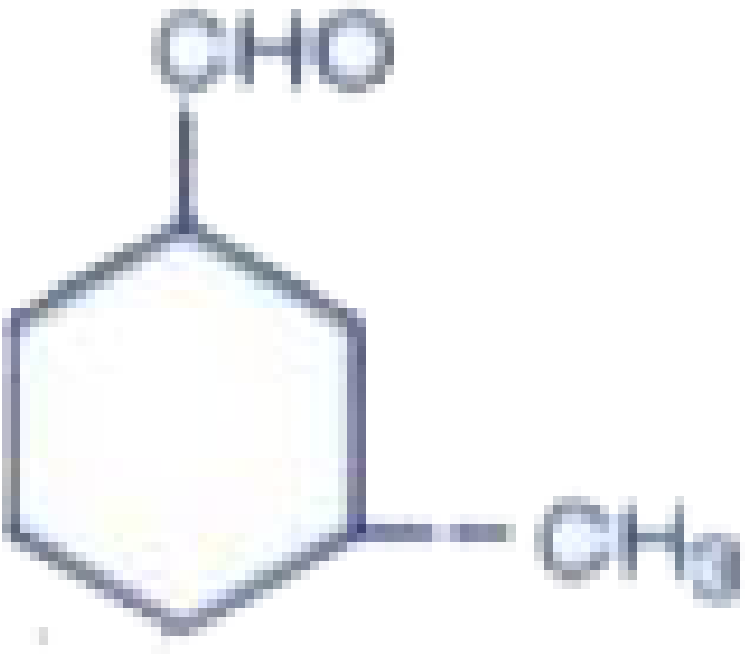
129. Write the common and I.U.P.A.C. names of the following compounds:



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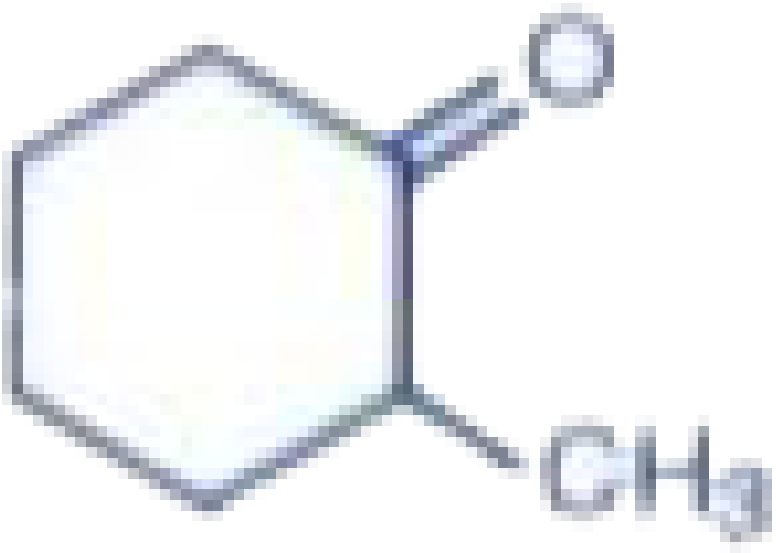
130. Write the common and I.U.P.A.C. names of the following compounds:



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131. Write the common and I.U.P.A.C. names of the following compounds:

$$(CH_3)_2CH\overset{\overset{O}{||}}{C}CH(CH_3)_2$$

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132. Write the common and I.U.P.A.C. names of the following compounds:

$CH_3CH = CHCHO$

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133. Draw the structures of the following compounds:

p-Nitropropiophenone

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134. Draw the structures of the following compounds:

p-methylbenzaldehyde

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135. Draw the structures of the following compounds:

p, p-Dihydroxybenzophenone

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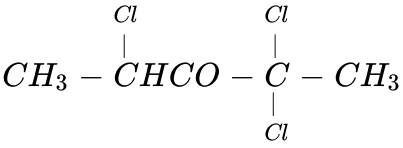
Watch Video Solution

136. Give the IUPAC names of the following compounds :



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137. Give the IUPAC names of the following compounds :

$CH_3CH(CH_3)CH_2CH_2CHO$

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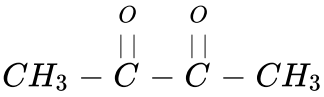
138. Give the IUPAC names of the following compounds :



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139. Give the IUPAC names of the following compounds :

$CH_3CH_2COCH_2C(CH_3)_3$

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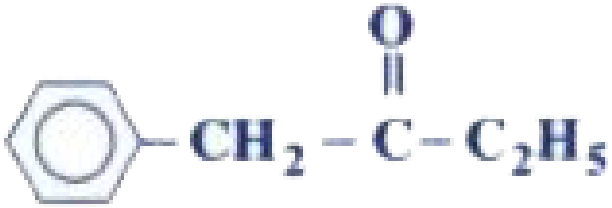
140. Give the IUPAC names of the following compounds :

$$CH_3CH_3 - \underset{\underset{CHO}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2CH_3$$

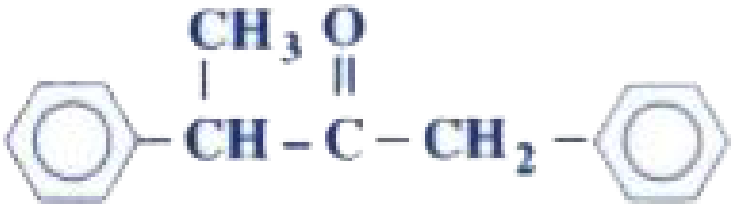
Watch Video Solution

141. Give the IUPAC names of the following compounds :



Watch Video Solution

142. Give the IUPAC names of the following compounds :



Watch Video Solution

143. Name an alkene which on reductive ozonolysis gives only acetone.

Watch Video Solution

144. How is salicylaldehyde prepared from phenol ?

Watch Video Solution

145. Name the main products in the following reactions:

Calcium acetate is distilled.

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146. Name the main products in the following reactions:

2-Butene reacts with O_3 in presence of Zn-dust and H_2O

Watch Video Solution

147. Give chemical equations for the synthesis of the following compounds, starting with cyclopentane, C_5H_{10}, alcohols of three or fewer C's and HCHO .

View Text Solution

148. Give chemical equations for the synthesis of the following compounds, starting with cyclopentane, C_5H_{10}, alcohols of three or fewer C's, HCHO and inorganic reagents.

Pentaoe-1,5-diol

View Text Solution

149. Write the structure of the product X :

$$PhCH_2CH_2COCl + H_2 \xrightarrow[\text{S or quinoline}]{Pd/C} X.$$

Watch Video Solution

150. Write structures for X and Y in the following reactions:

$$CH_3CH_2CH(CH_3)COCl \xrightarrow{LBAH} X$$

$$CH_3CH_2CH(CH_3)COCl \xrightarrow{LiAlH_4} Y$$

where LBAH is lithium tri-t-butoxyaluminium hydride. LBAH is a less active reducing agent than $LiAlH_4$ and does not reduce aldehydes to alcohols.

Watch Video Solution

151. Arrange the following in the increasing order of boiling points:

(i) Acetaldehyde (ii) Acetic acid

(iii) Ethyl alcohol (iv) CH_3OCH_3 (v) $CH_3CH_2CH_3$

Watch Video Solution

152. Write structural formulae and IUPAC names of carbonyl compounds with molecular formula C_3H_6O. Which out of these will be more reactive towards nucleophilic additions?

Watch Video Solution

153. Arrange the following in increasing order of reactivity :

$HCHO$, CH_3CHO AND C_6H_5CHO

Watch Video Solution

154. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

acetaldehyde ?

Watch Video Solution

155. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

acetone ?

Watch Video Solution

156. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

Acetophenone ?

Watch Video Solution

157. Predict the product of reaction of

(i) formaldehyde with ammonia.

Watch Video Solution

158. Predict the product of reaction of

acetone with $KMnO_4$.

Watch Video Solution

159. Predict the product of reaction of

acetone with Tollen's reagent.

Watch Video Solution

160. Predict the product of reaction of

sulfonation with benzaldehyde.

Watch Video Solution

161. Predict the product of reaction of

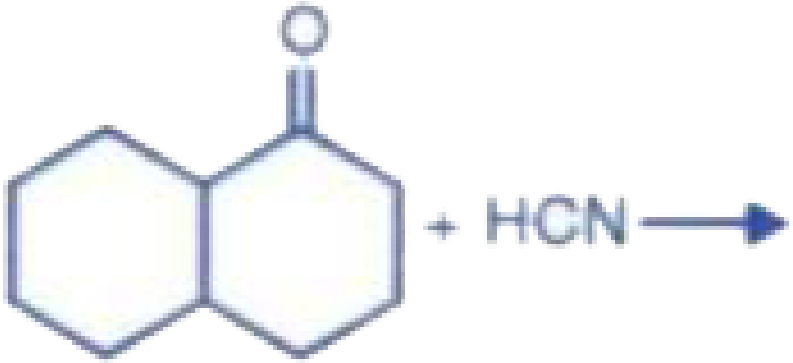
ozonolysis of ethylene.

Watch Video Solution

162. Arrange the following in order of decreasing boiling point (i) Propan-1-ol (ii) propanal (ill) propanone (iv) Propane.

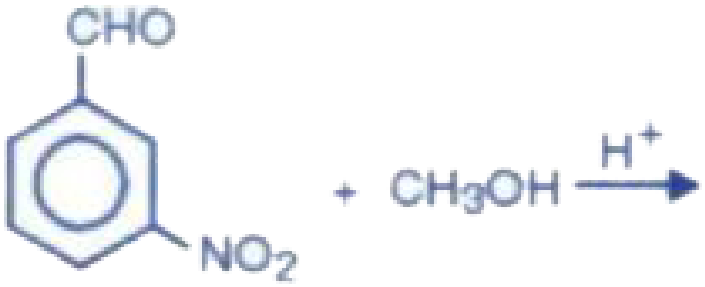
Watch Video Solution

163. Complete the following reaction.



Watch Video Solution

164. Complete the following reaction.



Watch Video Solution

165. Give IUPAC names of the following:

$ClCH_2COOH$

Watch Video Solution

166. Give IUPAC names of the following:

$O_2N.\,CH_2CH_2COOH$

Watch Video Solution

167. Give IUPAC names of the following:

$(CH_3)_3C.CH_2COOH$

Watch Video Solution

168. Give IUPAC names of the following:

$O = CHCH_2CH_2CH_2CH_2COOH$

Watch Video Solution

169. Give IUPAC names of the following:

$HOCH_2CH_2CHBrCOOH$

Watch Video Solution

170. Give IUPAC names of the following:

$CH_3CH_2COCH_2COOH$

Watch Video Solution

Watch Video Solution

171. Give IUPAC names of the following:

$CH_3CH_2CH(CHO)CH_2COOH$

Watch Video Solution

172. Give IUPAC names of the following:

$PhCH_2CH_2COOH$

Watch Video Solution

173. Give IUPAC names of the following:

Watch Video Solution

174. Give IUPAC names of the following:

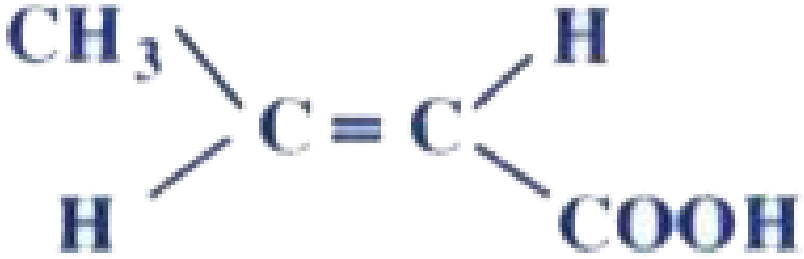
$$CH_2 = \underset{\substack{| \\ CH_2 \\ CH_3}}{C} - COOH$$

Watch Video Solution

175. Give IUPAC names of tartaric acid, citric acid, and methacrylic acid.

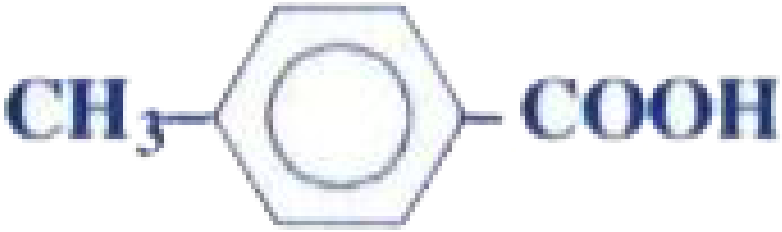
Watch Video Solution

176. Give the common names of the following acids:



Watch Video Solution

177. Give the common names of the following acids:



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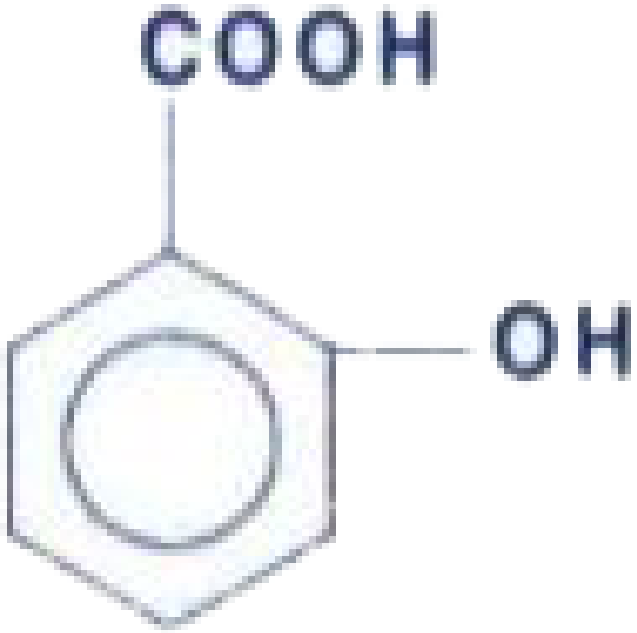
178. Give the common names of the following acids:



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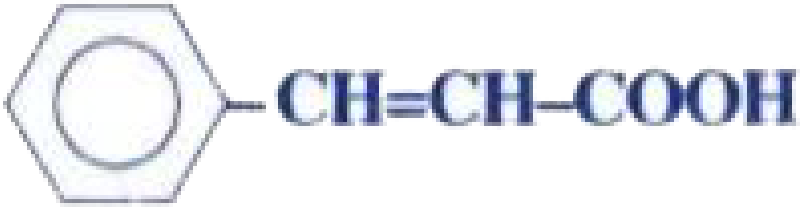
179. Give the common names of the following acids:



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180. Give the common names of the following acids:

$$CH_3 - \overset{O}{\overset{||}{C}} - \overset{O}{\overset{||}{C}} - OH$$

Watch Video Solution

181. Give the common names of the following acids:

$C_6H_5.CHOHCOOH$

Watch Video Solution

182. Give the derived name, as a derivative of acetic acid, of the following acids :

$(CH_3)_2C(OH)COOH$

Watch Video Solution

183. Give the derived name, as a derivative of acetic acid, of the following acids :

$(CH_3)_3CCOOH$

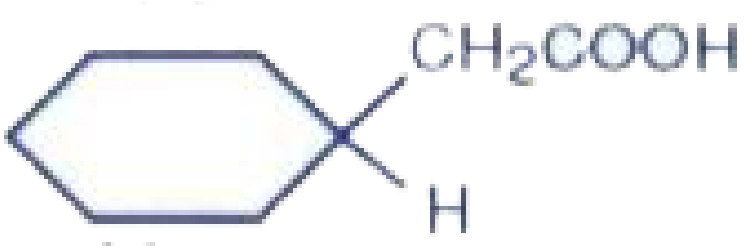
Watch Video Solution

184. Give the derived name, as a derivative of acetic acid, of the following acids :

$PhCH_2COOH$

Watch Video Solution

185. Give the derived name, as a derivative of acetic acid, of the following acids :



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186. Write the structural formulae of the following :

Benzene-1, 4-dicarboxylic acid

Watch Video Solution

187. Write the structural formulae of the following :

3-Bromo-4-phenylpentanoic acid

Watch Video Solution

188. Write the structural formulae of the following :

Caproic acid.

Watch Video Solution

189. Arrange the following compounds in increasing order of boiling points :

(i) C_3H_8 (ii) C_2H_5OH (iii) CH_3CHO (iv) CH_3COOH

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190. Why acetic acid in the vapour state has a molecular weight of 120 instead of 60 ?

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191. Why boiling and melting points of carboxylic acids are higher than those of corresponding alcohols ?

Watch Video Solution

192. Why only acids with five or fewer carbons are water soluble but many with six or more carbons dissolve in alcohols ?

Watch Video Solution

193. Which out of the following is : (a) the weakest acid (b) the strongest acid ?

(i) C_2H_5OH (ii) CH_3COOH (iii) C_6H_5OH (iv) H_2O

Watch Video Solution

194. Arrange the followsing in the increasing order of acid strengths:

(i) Fluoroacetic acid (ii) Chloroacetic acid (iii) Acetic acid (iv) Formic acid (v) Propionic acid.

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195. Arrange the following acids in the decreasing order of acid strength:

(i) Benzoic acid (ii) o-Chlorobenzoic acid (iii) m-Chlorobenzoic acid (iv) p-Chlorobenzoic acid.

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196. How is benzoic acid converted to

Benzyl chloride

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197. How is benzoic acid converted to

Benzyl alcohol

Watch Video Solution

198. How is benzoic acid converted to

m-nitrobenzoic acid

Watch Video Solution

199. How is benzoic acid converted to

Benzoic anhydride

Watch Video Solution

200. How is benzoic acid converted to

Aniline

Watch Video Solution

201. How is benzoic acid converted to

Benzaldehyde

Watch Video Solution

202. How is benzoic acid converted to

m-Nitrobenzyl alcohol.

Watch Video Solution

203. How would you convert the following into benzoic acid?

Toluene

Watch Video Solution

204. How would you convert the following into benzoic acid?

Benzyl alcohol

Watch Video Solution

205. How would you convert the following into benzoic acid?

Benzonitrile

Watch Video Solution

206. How would you convert the following into benzoic acid?

Propylbenzene

Watch Video Solution

207. How would you convert the following into benzoic acid?

Benzotrichloride

Watch Video Solution

208. Convert Propanoic acid into

Lactic acid

Watch Video Solution

209. Convert Propanoic acid into

α -alanine (2-Aminopropanoic acid)

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210. Convert Propanoic acid into

Dicarboxylic acid

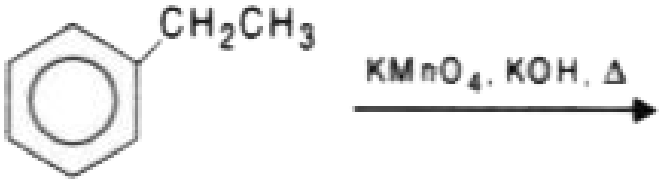
Watch Video Solution

211. Convert Propanoic acid into

Propenoic acid.

Watch Video Solution

212. Predict the the organic product of the following reactions:



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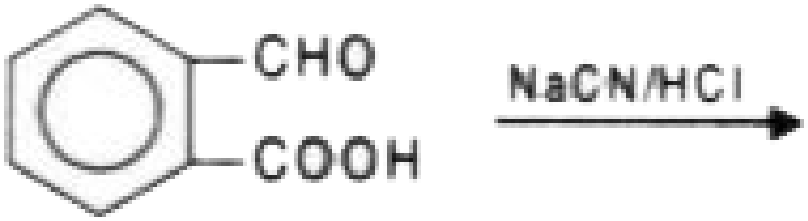
213. Predict the the organic product of the following reactions:



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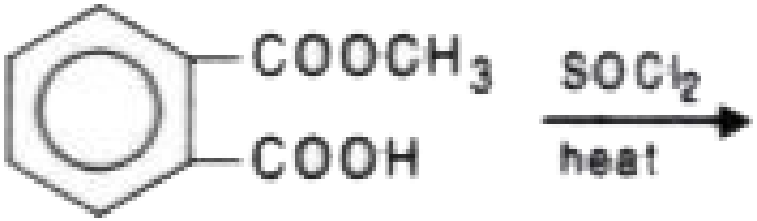
214. Predict the the organic product of the following reactions:



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215. Convert benzene into the following

m-Nitrobenzoic acid

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216. Convert benzene into the following

p-Nitrobenzoic acid.

Watch Video Solution

217. Convert benzene into the following

Phenylacetic acid (use inorganic and organic reagents having not more than one carbon)

Watch Video Solution

218. How will you bring about the following transformations?

Benzyl alcohol to phenylacetic acid

Watch Video Solution

219. How will you bring about the following transformations?

p-Methylacetophenone to benzene-1, 4-dicarboxylic acid (terephthalic acid)

Watch Video Solution

220. How will you bring about the following transformations?

Cyclo-hexene to hexane-1,6-dioic acid.

Watch Video Solution

221. What is the type of hybridization of carbonyl carbon?

Watch Video Solution

222. Write the IUPAC names of

Watch Video Solution

223. Write the IUPAC names of

$CH_2OH.CH_2CHO$

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224. Write the IUPAC names of

$$CH_3CH = CH - \overset{\overset{O}{||}}{C} - CH_3$$

Watch Video Solution

225. Write the structural formula of

Chain isomer of $CH_3CH_2(C)H_2CHO$

Watch Video Solution

226. Write the structural formula of

Position isomer of $CH_3COCH_2CH_2CH_3$

Watch Video Solution

227. Write the structural formula of

Functional isomer of $CH_3CH_2CH_2CHO$

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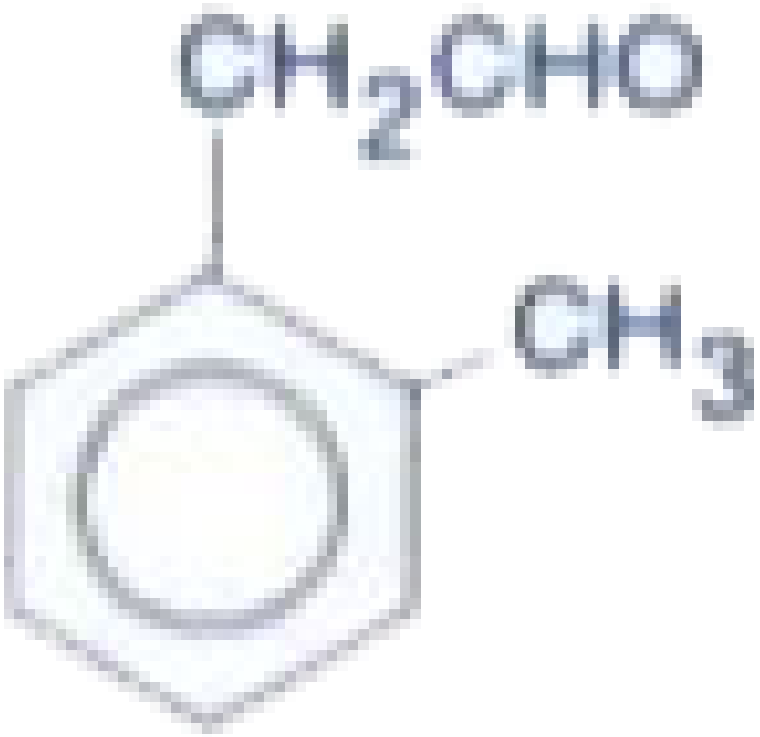
228. How many carbonyl isomers will $C_5H_{10}O$ have? Give their structures and IUPAC names

Watch Video Solution

229. Write the IUPAC names of



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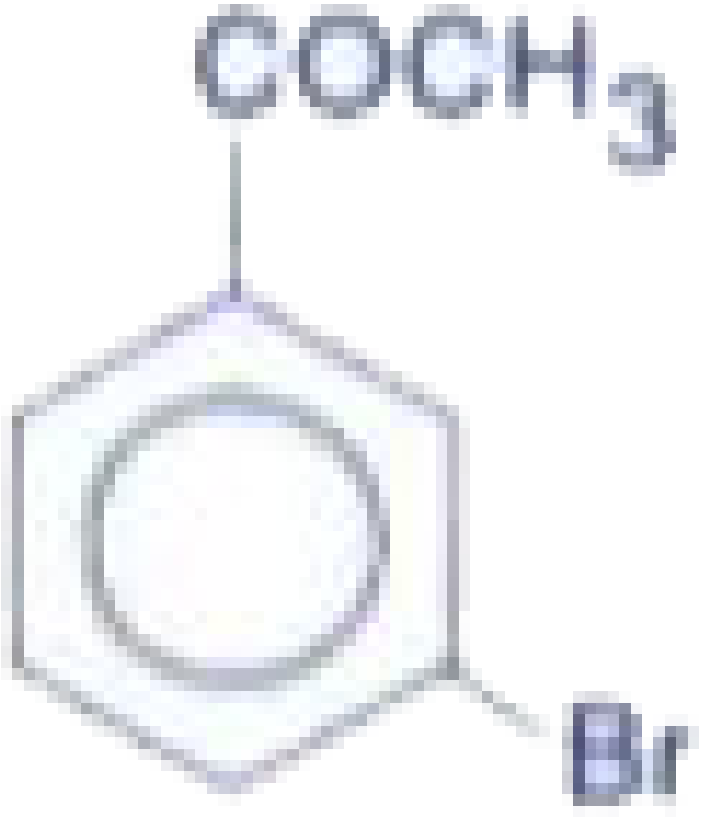
230. Write the IUPAC names of



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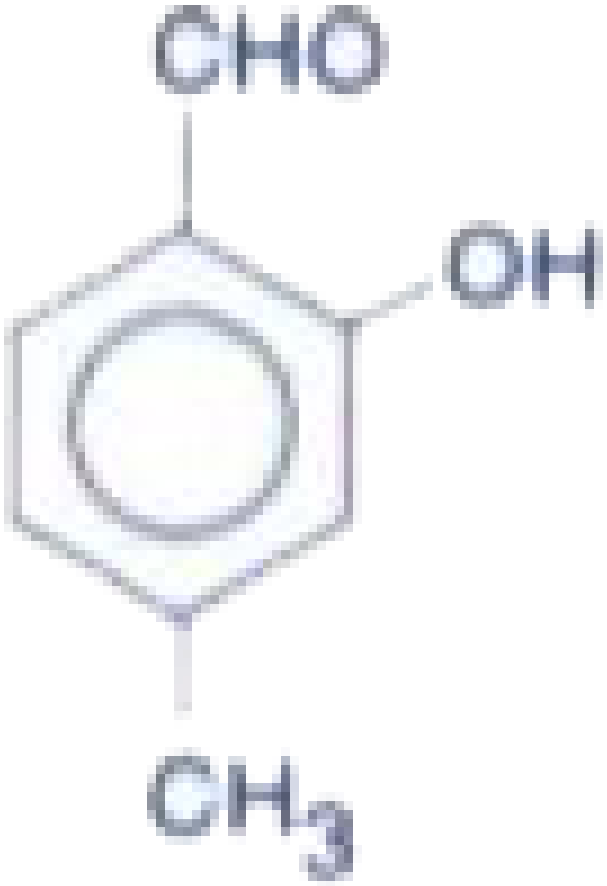
231. Write the IUPAC names of



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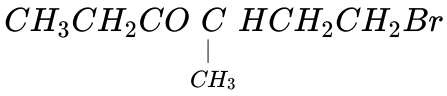
232. Write the IUPAC names of



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233. Write the IUPAC names of

$(CH_3)_3CCOCH_3$

Watch Video Solution

234. Write the structure of the following:

Dibenzyl ketone

Watch Video Solution

235. Write the structure of the following:

(p-Bromophenyl) ethanal

Watch Video Solution

236. Write the structure of the following:

Ethyl-sec.butyl ketone

Watch Video Solution

237. Write the common and I.U.P.A.C. names of the following compounds:

$(CH_3)_2CHCHO$

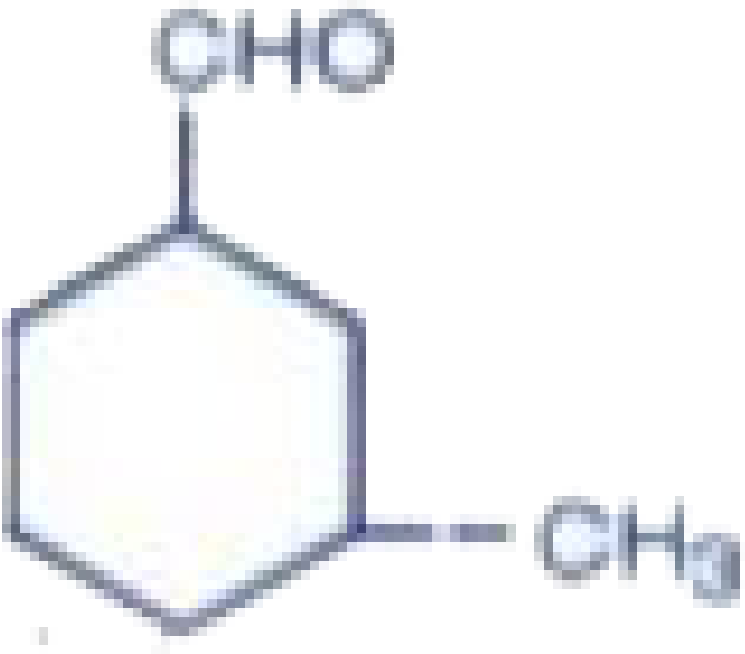
Watch Video Solution

238. Write the common and I.U.P.A.C. names of the following compounds:

$(CH_3)_2C = CHCOCH_3$

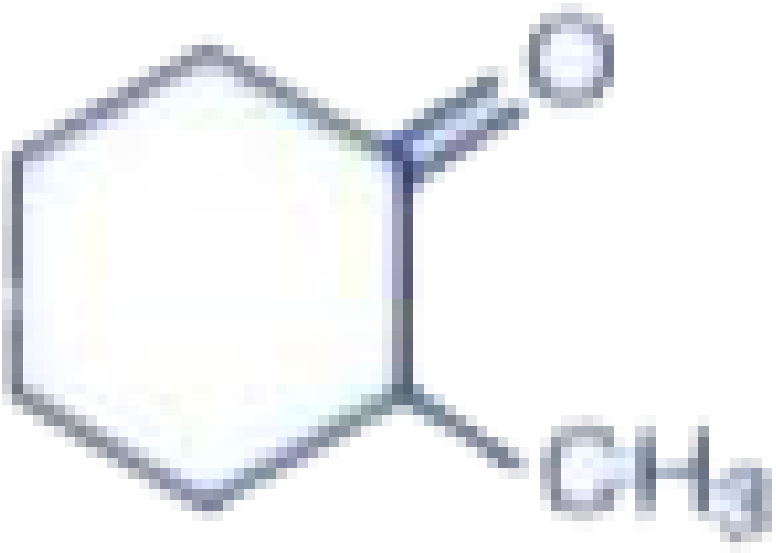
Watch Video Solution

239. Write the common and I.U.P.A.C. names of the following compounds:



Watch Video Solution

240. Write the common and I.U.P.A.C. names of the following compounds:



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241. Write the common and I.U.P.A.C. names of the following compounds:

$$(CH_3)_2CH\overset{\overset{O}{||}}{C}CH(CH_3)_2$$

Watch Video Solution

242. Write the common and I.U.P.A.C. names of the following compounds:

$CH_3CH = CHCHO$

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243. Draw the structures of the following compounds:

p-Nitropropiophenone

Watch Video Solution

244. Draw the structures of the following compounds:

p-methylbenzaldehyde

Watch Video Solution

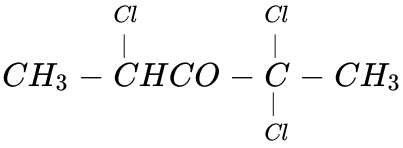
245. Draw the structures of the following compounds:

p, p-Dihydroxybenzophenone

Watch Video Solution

Watch Video Solution

246. Give the IUPAC names of the following compounds :



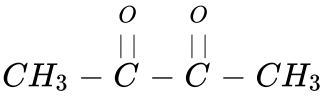
Watch Video Solution

247. Give the IUPAC names of the following compounds :

$CH_3CH(CH_3)CH_2CH_2CHO$

Watch Video Solution

248. Give the IUPAC names of the following compounds :



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249. Give the IUPAC names of the following compounds :

$CH_3CH_2COCH_2C(CH_3)_3$

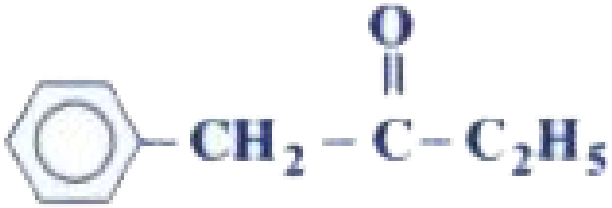
Watch Video Solution

250. Give the IUPAC names of the following compounds :

$$CH_3CH_3 - \underset{\underset{CHO}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2CH_3$$

Watch Video Solution

251. Give the IUPAC names of the following compounds :



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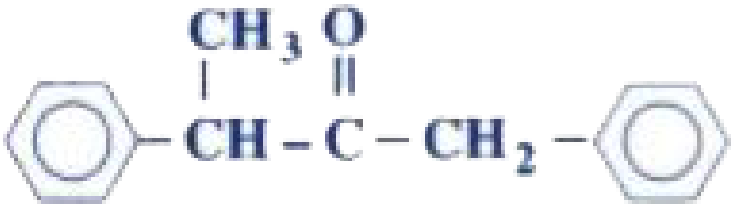
252. Give the IUPAC names of the following compounds :



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253. Name an alkene which on reductive ozonolysis gives only acetone.

Watch Video Solution

254. How is salicylaldehyde prepared from phenol ?

Watch Video Solution

255. Name the main products in the following reactions:

Calcium acetate is distilled.

Watch Video Solution

256. Name the main products in the following reactions:

2-Butene reacts with O_3 in presence of Zn-dust and H_2O

Watch Video Solution

257. Give chemical equations for the synthesis of the following compounds, starting with cyclopentane, C_5H_{10}, alcohols of three or fewer C's, HCHO and inorganic reagents.

Cyclopentanecarbaldehyde

Watch Video Solution

258. Give chemical equations for the synthesis of the following compounds, starting with cyclopentane, C_5H_{10}, alcohols of three or fewer C's, HCHO and inorganic reagents.

Pentane-1,5-diol

Watch Video Solution

259. Write the structure of the product X :

$$PhCH_2CH_2COCl + H_2 \xrightarrow[\text{S or quinoline}]{Pd/C} X.$$

Watch Video Solution

260. Write structures for X and Y in the following reactions:

$$CH_3CH_2CH(CH_3)COCl \xrightarrow{LBAH} X$$

$$CH_3CH_2CH(CH_3)COCl \xrightarrow{LiAlH_4} Y$$

where LBAH is lithium tri-t-butoxyaluminium hydride. LBAH is a less active reducing agent than $LiAlH_4$ and does not reduce aldehydes to alcohols.

Watch Video Solution

261. Arrange the following in the increasing order of boiling points:

(i) Acetaldehyde (ii) Acetic acid

(iii) Ethyl alcohol (iv) CH_3OCH_3 (v) $CH_3CH_2CH_3$

Watch Video Solution

262. Write structural formulae and IUPAC names of carbonyl compounds with molecular formula C_3H_6O. Which out of these will be more reactive towards nucleophilic additions?

Watch Video Solution

263. Arrange the following in increasing order of reactivity :

$HCHO$, CH_3CHO AND C_6H_5CHO

Watch Video Solution

264. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

acetaldehyde ?

Watch Video Solution

265. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

acetone ?

Watch Video Solution

266. Write the chemical formula of compounds formed by the Wolff Kishner reduction of:

Acetophenone ?

Watch Video Solution

267. Predict the product of reaction of

(i) formaldehyde with ammonia.

Watch Video Solution

268. Predict the product of reaction of

acetone with $KMnO_4$.

Watch Video Solution

269. Predict the product of reaction of

acetone with Tollen's reagent.

Watch Video Solution

270. Predict the product of reaction of

sulfonation with benzaldehyde.

Watch Video Solution

271. Predict the product of reaction of

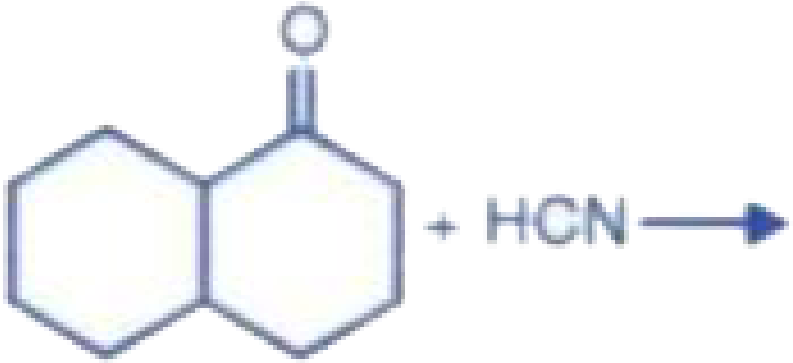
ozonolysis of ethylene.

Watch Video Solution

272. Arrange the following in order of decreasing boiling point (i) Propan-1-ol (ii) propanal (ill) propanone (iv) Propane.

Watch Video Solution

273. Complete the following reaction.



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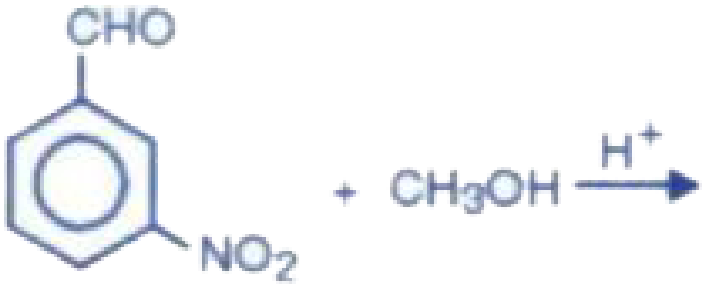
274. Complete the following reaction.



Watch Video Solution

275. Give IUPAC names of the following:

$ClCH_2COOH$

Watch Video Solution

276. Give IUPAC names of the following:

$O_2N.\,CH_2CH_2COOH$

Watch Video Solution

277. Give IUPAC names of the following:

$(CH_3)_3C.CH_2COOH$

Watch Video Solution

278. Give IUPAC names of the following:

$O=CHCH_2CH_2CH_2CH_2COOH$

Watch Video Solution

279. Give IUPAC names of the following:

$HOCH_2CH_2CHBrCOOH$

Watch Video Solution

280. Give IUPAC names of the following:

$CH_3CH_2COCH_2COOH$

Watch Video Solution

Watch Video Solution

281. Give IUPAC names of the following:

$CH_3CH_2CH(CHO)CH_2COOH$

Watch Video Solution

282. Give IUPAC names of the following:

$PhCH_2CH_2COOH$

Watch Video Solution

283. Give IUPAC names of the following:

Watch Video Solution

284. Give IUPAC names of the following:

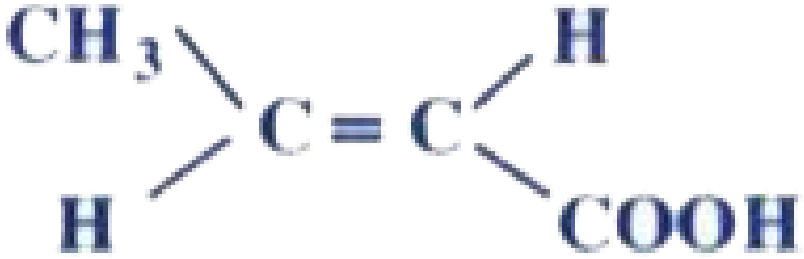
$$CH_2 = \underset{\substack{| \\ CH_2 \\ CH_3}}{C} - COOH$$

Watch Video Solution

285. Give IUPAC names of tartaric acid, citric acid, and methacrylic acid.

Watch Video Solution

286. Give the common names of the following acids:



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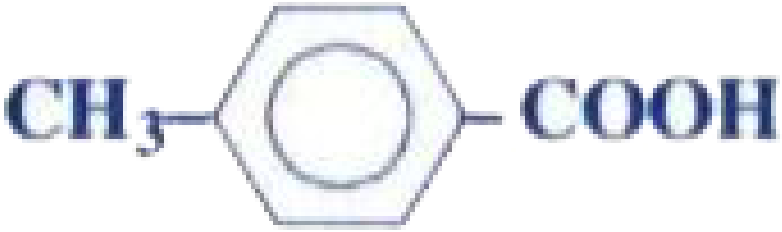
287. Give the common names of the following acids:



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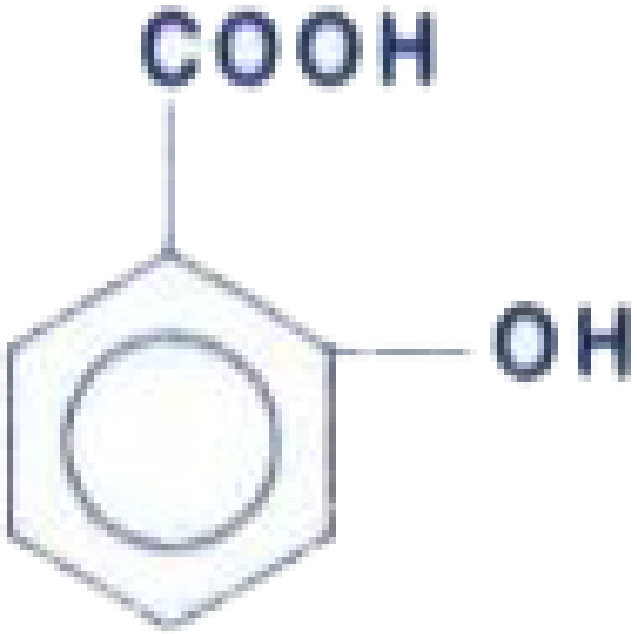
288. Give the common names of the following acids:



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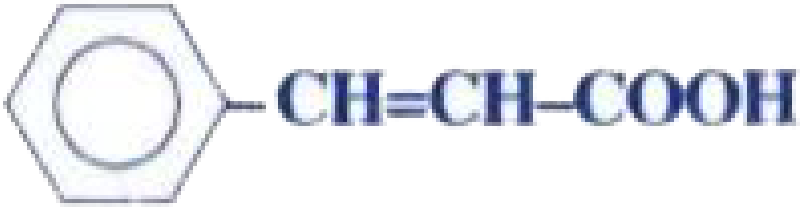
289. Give the common names of the following acids:



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290. Give the common names of the following acids:

$$CH_3 - \overset{O}{\overset{||}{C}} - \overset{O}{\overset{||}{C}} - OH$$

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291. Give the common names of the following acids:

$C_6H_5.CHOHCOOH$

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292. Give the derived name, as a derivative of acetic acid, of the following acids :

$(CH_3)_2C(OH)COOH$

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293. Give the derived name, as a derivative of acetic acid, of the following acids :

$(CH_3)_3CCOOH$

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294. Give the derived name, as a derivative of acetic acid, of the following acids :

$PhCH_2COOH$

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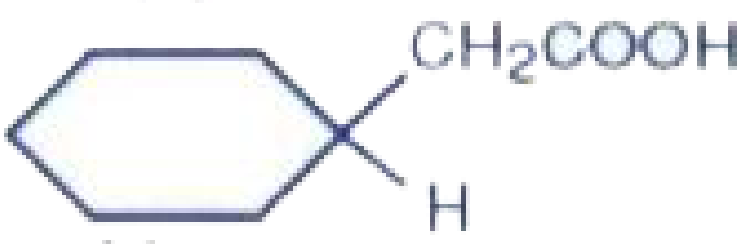
295. Give the derived name, as a derivative of acetic acid, of the following acids :



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296. Write the structural formulae of the following :

Benzene-1, 4-dicarboxylic acid

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297. Write the structural formulae of the following :

3-Bromo-4-phenylpentanoic acid

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298. Write the structural formulae of the following :

Caproic acid.

Watch Video Solution

299. Arrange the following compounds in increasing order of boiling points :

(i) C_3H_8 (ii) C_2H_5OH (iii) CH_3CHO (iv) CH_3COOH

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300. Why acetic acid in the vapour state has a molecular weight of 120 instead of 60 ?

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301. Why boiling and melting points of carboxylic acids are higher than those of corresponding alcohols ?

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302. Why only acids with five or fewer carbons are water soluble but many with six or more carbons dissolve in alcohols ?

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303. Which out of the following is : (a) the weakest acid (b) the strongest acid ?

(i) C_2H_5OH (ii) CH_3COOH (iii) C_6H_5OH (iv) H_2O

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304. Arrange the followsing in the increasing order of acid strengths:

(i) Fluoroacetic acid (ii) Chloroacetic acid (iii) Acetic acid (iv) Formic acid (v) Propionic acid.

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305. Arrange the following acids in the decreasing order of acid strength:

(i) Benzoic acid (ii) o-Chlorobenzoic acid (iii) m-Chlorobenzoic acid (iv) p-Chlorobenzoic acid.

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306. How is benzoic acid converted to

Benzyl chloride

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307. How is benzoic acid converted to

Benzyl alcohol

Watch Video Solution

308. How is benzoic acid converted to

m-nitrobenzoic acid

Watch Video Solution

309. How is benzoic acid converted to

Benzoic anhydride

Watch Video Solution

310. How is benzoic acid converted to

Aniline

Watch Video Solution

311. How is benzoic acid converted to

Benzaldehyde

Watch Video Solution

312. How is benzoic acid converted to

m-Nitrobenzyl alcohol.

Watch Video Solution

313. How would you convert the following into benzoic acid?

Toluene

Watch Video Solution

314. How would you convert the following into benzoic acid?

Benzyl alcohol

Watch Video Solution

315. How would you convert the following into benzoic acid?

Benzonitrile

Watch Video Solution

316. How would you convert the following into benzoic acid?

Propylbenzene

Watch Video Solution

317. How would you convert the following into benzoic acid?

Benzotrichloride

Watch Video Solution

318. Convert Propanoic acid into

Lactic acid

Watch Video Solution

319. Convert Propanoic acid into

α -alanine (2-Aminopropanoic acid)

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320. Convert Propanoic acid into

Dicarboxylic acid

Watch Video Solution

321. Convert Propanoic acid into

Propenoic acid.

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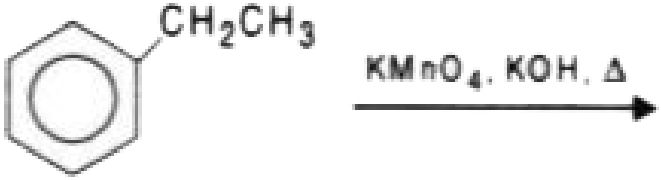
322. Predict the the organic product of the following reactions:



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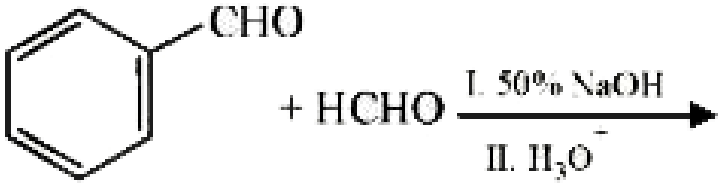
323. Major product of the following reactions is



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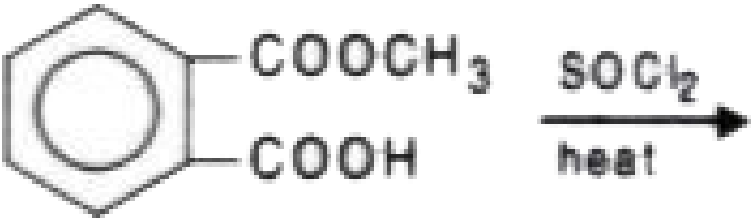
324. Predict the the organic product of the following reactions:



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325. Convert benzene into the following

m-Nitrobenzoic acid

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326. Convert benzene into the following

p-Nitrobenzoic acid.

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327. Convert benzene into the following

Phenylacetic acid (use inorganic and organic reagents having not more than one carbon)

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328. Conversion of Benzyl alcohol to phenylacetic acid

Watch Video Solution

329. How will you bring about the following transformations?

p-Methylacetophenone to benzene-1, 4-dicarboxylic acid (terephthalic acid)

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330. How will you bring about the following transformations?

Cyclo-hexene to hexane-1,6-dioic acid.

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EXERCISE (PART-I OBJECTIVE QUESTIONS)

1. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Formaldehyde reacts with Grignard's reagent to form a primary alcohol while acetaldehyde reacts with it to form.....

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2. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

All aldehydes and ketones react with phenylhydrazine in presence of an acid to form.....

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3. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

For the addition reactions with HCN, $NaHSO_3$, aldehydes are....reactive than ketones.

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4. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ammonia and.....react to give hexamethylenetetramine.

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5. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid,

$CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Reduction of Tollons' reagent to a silver mirror is known as.....

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6. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

3-chloropentanal may be represented by the formula.....

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7. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Methanal+ammonia=.....

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8. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ethanol vapours are passed over heated copper and the product is treated with aqueous NaOH. The final product is.....

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9. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzaldehyde undergoes ..... reaction on treatment with concentrated sodium hydroxide because it has .....

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10. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The IUPAC name of acetic acid is ..... and that of propionic acid is .....

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11. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Sodium acetate when fused with ..... forms methane.

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12. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Sodium acetate when subjected to ..... forms ethane and this reaction is called ..... .

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13. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The most common monocarboxylic acid contains two carbon atoms and may be represented by the structural formula .....

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14. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The structural formula for trimethylacetic acid may be drawn as ..... and IUP AC name for the acid is ..... .

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15. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

The meso and (+)forms of tartaric acids are ..... isomers.

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16. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

The(+) and(-) forms of tartaric acids are ..... .

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17. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

In Hell-Vohlard Zelinsky reaction, the carboxylic acids are halogenated at the ..... position by using ..... and .....

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18. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Acetic acid on treatment with sodium carbonate liberates .....

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19. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ammonium salts of carooxylic acids on heating lose a ..... . molecule and form ..... .

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20. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Chloroacetic acid is ..... than trichloroacetic acid

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21. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Oxalic acid is a ..... acid.

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22. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The formula of the main product obtained when acetic acid reacts with PCl_5 is ....

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23. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Kolbe's electrolysis of ..... produces n-hexane at the anode.

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24. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Acetic acid on reduction with $LiAlH_4$ yields ....

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25. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Higher the ..... or lower the ..... of an acid, stronger is the acid.

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26. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

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higher, lower.)

Methyl cyanide on hydrolysis with dil. HCl gives .....

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27. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Vinegar is a dilute solution of ..... .

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28. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Boiling points of acids are ..... than those of alcohols of comparable molecular mass.

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29. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

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Reaction of benzoyl chloride with H2 and Pd in presence of $BaSO_4$ and S yields .... and reaction is known as ..... reaction.

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30. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Benzaldehyde reduces ..... but not the ..... .

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31. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

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The oxidation of toluene with ..... gives benzaldehyde but with ..... gives benzoic acid.

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32. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzoic acid does not undergo Friedel-crafts reaction due ..... of the benzene ring by the ..... effect of -COOH groups

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33. The reagent with which both acetaldehyde and acetone react easily is

A. Fehling solution

B. Grignard reagent

C. Schiff's reagent

D. Tollens' reagent

Answer: B

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34. When acetaldehyde is heated with Fehling solution, it gives a precipitate of

A. Cu

B. CuO

C. Cu_2O

D. $Cu + CuO + Cu_2O$

Answer: C

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35. Cannizzaro reaction is not given by

A. trimethylacetaldehyde

B. acetaldehyde

C. benzaldehyde

D. formaldehyde.

Answer: B

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36. A compound that gives positive iodoform test is

A. 1-pentanol

B. 2-pentanone

C. 3-pentanone

D. pentanal

Answer: B

Watch Video Solution

37. The compound oxidised to prepare methyl ethyl ketone is

A. 2-Propanol

B. 1-Butanol

C. 2-Butanol

D. t-Butyl alcohol.

Answer: C

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38. The formation of cyanohydrin from a ketone is an example of

A. electrophilic addition

B. nucleophilic addition

C. nucleophilic substitution

D. electrophilic substitution

Answer: B

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39. Treatment of propionaldehyde with dil. NaOH solution gives

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CHOHCH(CH_3)CHO$

C. $CH_3CH_2CHOHCH_2CH_2CHO$

D. $CH_3CH_2COCH_2CH_2CHO$

Answer: B

Watch Video Solution

40. Hydrogenation of benzoyl chloride in the presence of Pd on $BaSO_4$ gives

A. Benzyl alcohol

B. Benzaldehyde

C. Benzoic acid

D. Phenol.

Answer: B

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41. Aldol condensation of acetaldehyde involves the formation of which of the following intermediate ?

A. $CH_3 - \underset{\underset{O}{||}}{C} - \underset{\underset{OH}{|}}{C}H - CH_3$

B. $CH_3\underset{\underset{OH}{|}}{C}H - CH_2 - \underset{\underset{O}{||}}{C} - H$

C. $CH_3CH_2\underset{\underset{OH}{|}}{C}H - \underset{\underset{O}{||}}{} - H$

D. $CH_3CH_2OH + CH_3COOH$

Answer: B

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42. Positive iodofonn test is given by

A. acetamide

B. acetophenone

C. methylene

D. 1-hydroxypropane.

Answer: B

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43. Clemmensen reduction of a ketone is carried out in presence of

A. H_2 with Pd as catalyst

B. glycol with KOH

C. $LiAlH_4$ in ether

D. $Zn - Hg$ with HCl

Answer: D

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44. Acetone on heating with conc. H_2SO_4 mainly gives

A. mesitylene

B. mesityl oxide

C. toluene

D. xylene.

Answer: A

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45. Schiff reagent gives pink colour with

A. acetaldehyde

B. acetone

C. acetic acid

D. methyl acetone

Answer: A

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46. The reaction of benzaldehyde with alkali gives

A. phenol+ benzoate

B. Benzene+benzyl alcohol

C. benzyl alcohol+ sodium benzoate

D. phenol+ benzene.

Answer: C

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47. The compound which does not give formaldehyde on heating or distillation is

A. Formalin

B. Trioxane

C. Para-aldehyde

D. Para-formaldehyde.

Answer: C

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48. A cyanohydrin of a compound X on hydrolysis gives lactic acid. The X is

A. $HCHO$

B. CH_3CHO

C. $(CH_3)_2CO$

D. $C_6H_5CH_2CHO$

Answer: B

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49. The reaction of formaldehyde with Grignard's reagent followed by hydrolysis yields

A. a primary alcohol

B. a secondary alcohol

C. a tertiary alcohol

D. a phenol.

Answer: A

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50. IUPAC name of $CH_3CH_2CH_2CH(CH_3)COCH_3$ is

A. isohexanone

B. heptanone

C. hexanone-5

D. 3-Methylhexan-2-one.

Answer: D

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51. IUPAC name of $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH - \underset{\underset{O}{||}}{C} - CH_3$ is

A. 4-methylpent-3-en-2-one

B. 2-Methylpent-3-en-2-one

C. 3-Methylpent-2-en-1-one

D. none of these.

Answer: A

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52. The compound which does not give iodoform test is

A. Acetophenone

B. Benzophenone

C. $CH_3\underset{CH_3}{\underset{|}{C}}HOH$

D. $CH_3 - \underset{OH}{\underset{|}{C}}H - CH_2CH_2CH_3$

Answer: B

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53. The compound which does not give iodoform on treatment with NaOH and iodine is

A. CH_3OH

B. CH_3CH_2OH

C. CH_3CHO

D. $(CH_3)_2CO$

Answer: A

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54. When phenol is treated with $CHCl_3$ and NaOH, the product formed is

A. benzaldehyde

B. salicylaldehyde

C. salicylic acid

D. benzoic acid.

Answer: B

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55. In the following reaction product 'P' is

$$R-\overset{\overset{O}{||}}{C}-Cl \xrightarrow[BaSO_4]{H_2} P.$$

A. RCH_2OH

B. $RCOOH$

C. $RCHO$

D. RCH_3

Answer: C

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56. Bakelite is a product of reaction between

A. formaldehyde and NaOH

B. phenol and methanal

C. aniline and urea

D. phenol and chloroform.

Answer: B

Watch Video Solution

57. The number of bonds between carbon and oxygen atoms in major product of the following reaction is_____.

$$CH_3\overset{OH}{\overset{|}{C}}HCH_2CH_2NH_2 \xrightarrow[\text{triethylam in e}]{\text{ethyl formate (1 equiv)}}$$

A. Tischenko reaction

B. Cannizzaro's reaction

C. Knoevenagel reaction

D. Wurtz's reaction

Answer: A

Watch Video Solution

58. Tollen's reagent is

A. Alkaline mercuric chloride solution

B. Ammoniacal silver nitrate solution

C. Ammonium citrate solution

D. Alkaline potassium permanganate solution.

Answer: B

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59. Hydrolysis of ozonide of but-1-ene gives

A. Ethylene only

B. acetaldebyde and Formaldehyde

C. propionaldehyde and formaldehyde

D. acetaldehyde only

Answer: C

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60. The reagent used to convert $CH \equiv CH.CH_2CH_3$ to $CH_3COCH_2CH_3$ is

A. $H_2\emptyset H^+$

B. Hg^{2+} / H_2SO_4

C. $H_2SO_4(\text{conc.}) / H_3PO_4$

D. $K_2Cr_2O_7 / KMnO_4$

Answer: B

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61. The boiling point of acetic acid is higher than expected from its molecular weight because of

A. Association through hydrogen bonding

B. Strong ionizing power

C. Non-polar character

D. Solubility in water.

Answer: A

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62. Acetic acid is a weak acid because

A. It is an organic acid

B. It is a monobasic acid

C. It is unstable

D. It is slightly ionized

Answer: D

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63. The correct order of increasing acidic strength is

A. Phenol $<$ Ethanol $<$ Chloroacetic acid $<$ Acetic acid

B. Ethanol $<$ Phenol $<$ Chloroacetic acid $<$ Acetic acid

C. Ethanol $<$ Phenol $<$ Acetic acid $<$ Chloroacetic acid

D. Chloroacetic acid $<$ Acetic acid $<$ Phenol $<$ Ethanol

Answer: C

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64. Compound $Ph - O - \overset{O}{\overset{||}{C}} - Ph$ can be prepared by the reaction of

A. Phenol and benzoic acid in the presence of NaOH

B. Phenol and benzoyl chloride in the presence of pyridine

C. Phenol and benzoyl chloride in the presence of $ZnCl_2$

D. Phenol and benzaldehyde in the presence of palladium.

Answer: B

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65. Carboxylic group shows acidic character because

A. it turns blue litmus red

B. it contains OH group

C. it reacts with alkalis to form salts

D. the carboxylate ion is resonance stabilized.

Answer: D

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66. The Hell-Volhard-Zelinsky reaction is used to

A. determine the percentage of halogen in a compound

B. distinguish primary alcohols from secondary alcohols

C. synthesize α-bromoacids

D. synthesize α-hydroxy acids

Answer: C

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67. When chlorine is passed through acetic acid in presence of halogen carrier (red P), it forms

A. acetyl chloride

B. trichloroacetaldehyde (chloral)

C. trichloroacetic acid

D. methyl chloride.

Answer: C

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68. Acetic acid exists as dimer in benzene due to

A. a condensation reaction

B. hydrogen bonding.

C. presence of carbonyl group

D. presence of hydrogen atom at α-carbon atom.

Answer: B

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69. Weakest acid among the following is

A. acetic acid

B. phenol

C. water

D. acetylene

Answer: D

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70. Ester formation involves the reaction of

A. an aldehyde and a ketone

B. an alcohol with RMgX

C. two molecules of an acid with dehydrating agent

D. an acyl halide with an alcohol.

Answer: D

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71. Which of the following reaction is expected to readily give a hydrocarbon product in good yield ?

A. $RCOOK \xrightarrow[\text{Oxidation}]{\text{Electrolytic}}$

B. $RCOOAg \xrightarrow{I_2}$

C. $CH_3CH_3 \xrightarrow{Cl_2 / hv}$

D. $(CH_3)_3CCl \xrightarrow{C_2H_5OH}$

Answer: A

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72. Heating a mixture of sodium benzoate and soda-lime gives

A. benzene

B. methane

C. sodium phenoxide

D. calcium benzoate

Answer: A

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73. Which of the following compounds will react with $NaHCO_3$ solution to give sodium salt and carbon dioxide?

A. Acetic acid

B. n-Hexanol

C. Phenol

D. both (b) and (c).

Answer: A

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74. Chlorination of toluene in presence of light and heat followed by treatment with aqueous NaOH gives

A. o-cresol

B. p-cresol

C. 2, 4-dihydroxytoluene

D. benzoic acid

Answer: D

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75. Which of the following carboxylic acid undergoes decarboxylation easily ?

A. $C_6H_5 - CO - CH_2 - COOH$

B. $C_6H_5 - CO - COOH$

C. $C_6H_5 - \underset{\underset{OH}{|}}{C}H - COOH$

D. $C_6H_5 - \underset{\underset{NH_2}{|}}{C}H - COOH$

Answer: A

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76. $CH_3CH_2COOH \xrightarrow[\text{Red P}]{Br_2} \xrightarrow{NH_3} Y$

Y in the above reaction is

A. lactic acid

B. ethylamine

C. propylamine

D. alanine

Answer: D

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77. When propionic acid is treated with aqueous sodium bicarbonate, CO_2 is liberated. The "C" of CO_2 comes from

A. methyl group

B. carboxylic acid group

C. methylene group

D. bicarbonate

Answer: D

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78. Addition of water to alkynes occurs in acidic medium and in the presence of Hg^{2+} ions as a catalyst. Which of the following products will be formed on addition of water to but-1-yne under these conditions

A. $CH_3 - CH_2 - CH_2 - \overset{\overset{O}{||}}{C} - H$

B. $CH_3 - CH_2 - \overset{\overset{O}{||}}{C} - CH_3$

C. $CH_3 - CH_2 - \overset{\overset{O}{||}}{C} - OH + CO_2$

D. $CH_3 - \overset{\overset{O}{||}}{C} - OH + H - \overset{\overset{O}{||}}{C} - H$

Answer: B

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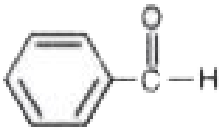
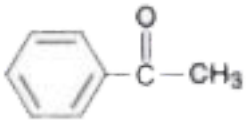
79. Which of the following compounds is most reactive towards nucleophilic addition reactions ?

A. $CH_3 - \overset{O}{\overset{||}{C}} - H$

B. $CH_3 - \overset{O}{\overset{||}{C}} - CH_3$

C. 

D. 

Answer: A

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80. The reagent which does not react with both, acetophenone and benzaldehyde is

A. Sodium hydrogensulfite

B. Phenylhydrazine

C. Fehling's solution

D. Grignard reagent

Answer: A

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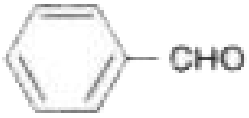
81. Cannizaro's reaction is not given by

A. 

B. 

C. HCHO

D. CH_3CHO

Answer: D

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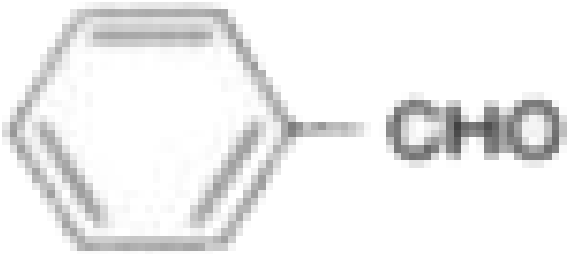
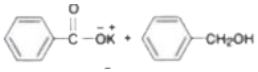
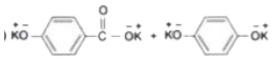
82. Which product is formed when tht, compound

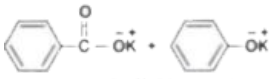


is treated with concentrated aqueous KOH solution?

A. 

B. 

C. 

D. 

Answer: B

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83. $CH_3 - C \equiv CH \xrightarrow[1\%\, HgSO_4]{40\%\, H_2SO_4} A \xrightarrow{\text{isomerisation}} CH_3 - \underset{\underset{O}{||}}{C} - CH_3$

Structure of 'A' and type of isomerism in the above reaction are respectively.

A. Prop-1-en-2-ol, metamerism

B. Prop-1-en-l -ol, tautomerism

C. Prop-2-en-2-ol, geometrical isomerism

D. Prop-1-en-2-ol, tautomerism

Answer: D

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84. Compounds A and C in the following reaction are

$CH_3CHO \xrightarrow[(ii)\, H_2O]{(i)\, CH_3MgBr} A \xrightarrow{H_2SO_4\,.\,\Delta} (B) \xrightarrow{\text{Hydroboration oxidation}} (C)$

A. identical

B. positional isomers

C. functional isomers

D. optical isomers.

Answer: B

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85. Which is the most suitable reagent for the following conversion ?

$$CH_3 - CH = CH - CH_2 - \overset{O}{\overset{||}{C}} - CH_3 \rightarrow CH_3 - CH = CH - CH_2 - \overset{O}{\overset{|}{C}}$$

A. Tollens' reagent

B. Benzoyl peroxide

C. I_2 and NaOH solution

D. Sn and NaOH solution

Answer: C

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86. Which of the following compounds will give butanone on oxidation with alkaline $KMnO_4$ solution ?

A. Butan-1-ol

B. Butan-2-ol

C. Both of these

D. None of these

Answer: B

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87. In clemmensen Reduction, carbonyl compound is treated with

A. Zinc amalgam+ HCl

B. Sodium amalgam+ HCI

C. Zinc amalgam+ nitric acid

D. Sodium amalgam+ HNO_3

Answer: A

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88. Correct statement by changing underline part of sentence

Aldehydes and ketones both contain a $\underline{\text{carboxyl group}}$,

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89. Correct statement by changing underline part of sentence

According to IUPAC system, aldehydes are named as $\underline{\text{alkanones}}$,

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90. Correct statement by changing underline part of sentence

Hexanal and 2-methylpentanal are functional isomers.

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91. Correct statement by changing underline part of sentence

Pentan-2-one and pentan-3-one are chain isomers.

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92. Correct statement by changing underline part of sentence

Ketones restore the pink colour of Schiff s reagent.

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93. Correct statement by changing underline part of sentence

Aldehydes and ketones undergo nucleophilic substitution.

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94. Correct statement by changing underline part of sentence

Aldehydes can act as strong reducing agents since they themselves can be reduced easily.

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95. Correct statement by changing underline part of sentence

An acid shows the reactions of carbonyl group also.

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96. Correct statement by changing underline part of sentence

Carboxylic acids are stronger acids than mineral acids.

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97. Correct statement by changing underline part of sentence

Acetic acid is a $\underline{\text{stronger acid}}$ than formic acid.

Watch Video Solution

98. Correct statement by changing underline part of sentence

Formic acid $\underline{\text{undergoes}}$ halogenation.

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99. Correct statement by changing underline part of sentence

2-chloropropanoic acid is $\underline{\text{weaker}}$ than 3-chloropropanoic acid.

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100. The boiling point of propionic acid is more than that of n-butyl alcohol, an alcohol of comparable molecular weight.

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101. Match the following

1. Acetic acid to chloroacetic acid	(*a*) Decarboxylation
2. Formation of oxalic acid	(*b*) Kolbe's electrolytic reaction
3. Sodium acetate to methane	(*c*) Sucrose + Nitric acid
4. Sodium propionate to *n*-butane.	(*d*) HVZ reaction.
5. Fehling solution	(*e*) Rosaniline hydrochloride decolorised by SO_2
6. Benedict's reagent	(*f*) Copper sulfate + sodium potassium tartrate
7. Schiff's reagent	(*g*) Copper sulfate + sodium citrate

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102. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI,

SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Formaldehyde reacts with Grignard's reagent to form a primary alcohol while acetaldehyde reacts with it to form.....

Watch Video Solution

103. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI,

SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

All aldehydes and ketones react with phenylhydrazine in presence of an acid to form.....

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104. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI,

SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

For the addition reactions with HCN, $NaHSO_3$, aldehydes are....reactive than ketones.

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105. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI,

SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ammonia and.....react to give hexamethylenetetramine.

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106. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more,

less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Reduction of Tollons' reagent to a silver mirror is known as.....

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107. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde

cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

3-chloropentanal may be represented by the formula.....

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108. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic

acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Methanal+ammonia=.....

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109. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water,

amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ethanol vapours are passed over heated copper and the product is treated with aqueous NaOH. The final product is.....

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110. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water,

amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzaldehyde undergoes ..... reaction on treatment with concentrated sodium hydroxide because it has .....

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111. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water,

amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The IUPAC name of acetic acid is ..... and that of propionic acid is .....

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112. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water,

amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Sodium acetate when fused with ..... forms methane.

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113. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Sodium acetate when subjected to ..... forms ethane and this reaction is called ..... .

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114. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The most common monocarboxylic acid contains two carbon atoms and may be represented by the structural formula .....

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115. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The structural formula for trimethylacetic acid may be drawn as ..... and IUP AC name for the acid is ..... .

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116. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol,

dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The meso and (+)forms of tartaric acids are ..... isomers.

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117. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid,

$CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The(+) and(-) forms of tartaric acids are ..... .

Watch Video Solution

118. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

In Hell-Vohlard Zelinsky reaction, the carboxylic acids are halogenated at the ..... position by using ..... and .....

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119. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Acetic acid on treatment with sodium carbonate liberates .....

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120. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ammonium salts of carooxylic acids on heating lose a ..... . molecule and form ..... .

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121. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Chloroacetic acid is ..... than trichloroacetic acid

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122. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Oxalic acid is a ..... acid.

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123. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The formula of the main product obtained when acetic acid reacts with PCl_5 is ....

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124. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Kolbe's electrolysis of ..... produces n-hexane at the anode.

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125. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Acetic acid on reduction with $LiAlH_4$ yields ....

Watch Video Solution

126. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Higher the ..... or lower the ..... of an acid, stronger is the acid.

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127. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Methyl cyanide on hydrolysis with dil. HCl gives .....

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128. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Vinegar is a dilute solution of ..... .

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129. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Boiling points of acids are ..... than those of alcohols of comparable molecular mass.

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130. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Reaction of benzoyl chloride with H2 and Pd in presence of $BaSO_4$ and S yields .... and reaction is known as ..... reaction.

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131. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid,

higher, lower.)

Benzaldehyde reduces ..... but not the ..... .

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132. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The oxidation of toluene with ..... gives benzaldehyde but with ..... gives benzoic acid.

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133. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzoic acid does not undergo Friedel-crafts reaction due ..... of the benzene ring by the ..... effect of -COOH groups

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134. The reagent with which both acetaldehyde and acetone react easily, is :

A. Fehling solution

B. Grignard reagent

C. Schiff's reagent

D. Tollens' reagent

Answer: B

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135. When acetaldehyde is heated with Fehling solution, it gives a precipitate of

A. Cu

B. CuO

C. Cu_2O

D. $Cu + CuO + Cu_2O$

Answer: C

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136. Cannizzaro reaction is not given by

A. trimethylacetaldehyde

B. acetaldehyde

C. benzaldehyde

D. formaldehyde.

Answer: B

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137. A compound that gives positive iodoform test is

A. 1-pentanol

B. 2-pentanone

C. 3-pentanone

D. pentanal

Answer: B

Watch Video Solution

138. The compound oxidised to prepare methyl ethyl ketone is

A. 2-Propanol

B. 1-Butanol

C. 2-Butanol

D. t-Butyl alcohol.

Answer: C

Watch Video Solution

139. The formation of cyanohydrin from a ketone is an example of

A. electrophilic addition

B. nucleophilic addition

C. nucleophilic substitution

D. electrophilic substitution

Answer: B

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140. Treatment of propionaldehyde with dil. NaOH solution gives

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CHOHCH(CH_3)CHO$

C. $CH_3CH_2CHOHCH_2CH_2CHO$

D. $CH_3CH_2COCH_2CH_2CHO$

Answer: B

Watch Video Solution

141. Hydrogenation of benzoyl chloride in the presence of Pd on $BaSO_4$ gives

A. Benzyl alcohol

B. Benzaldehyde

C. Benzoic acid

D. Phenol.

Answer: B

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142. The aldol condensation of acetaldehyde results in the formation of

A. $CH_3 - \underset{\underset{O}{||}}{C} - \underset{\underset{OH}{|}}{C}H - CH_3$

B. $CH_3\underset{\underset{OH}{|}}{C}H - CH_2 - \underset{\underset{O}{||}}{-}H$

C. $CH_3CH_2\underset{\underset{OH}{|}}{C}H - \underset{\underset{O}{||}}{-}H$

D. $CH_3CH_2OH + CH_3COOH$

Answer: B

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143. Positive iodofonn test is given by

A. acetamide

B. acetophenone

C. methylene

D. 1-hydroxypropane.

Answer: B

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144. Clemmensen reduction of a ketone is carried out in presence of

A. H_2 with Pd as catalyst

B. glycol with KOH

C. $LiAlH_4$ in ether

D. $Zn - Hg$ with HCl

Answer: D

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145. Acetone on heating with conc. H_2SO_4 mainly gives

A. mesitylene

B. mesityl oxide

C. toluene

D. xylene.

Answer: A

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146. Schiff reagent gives pink colour with

A. acetaldehyde

B. acetone

C. acetic acid

D. methyl acetone

Answer: A

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147. The reaction of benzaldehyde with alkali gives

A. phenol+ benzoate

B. Benzene+benzyl alcohol

C. benzyl alcohol+ sodium benzoate

D. phenol+ benzene.

Answer: C

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148. The compound which does not give formaldehyde on heating or distillation is

A. Formalin

B. Trioxane

C. Para-aldehyde

D. Para-formaldehyde.

Answer: C

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149. A cyanohydrin of a compound X on hydrolysis gives lactic acid. The X is

A. $HCHO$

B. CH_3CHO

C. $(CH_3)_2CO$

D. $C_6H_5CH_2CHO$

Answer: B

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150. The reaction of formaldehyde with Grignard's reagent followed by hydrolysis yields

A. a primary alcohol

B. a secondary alcohol

C. a tertiary alcohol

D. a phenol.

Answer: A

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151. IUPAC name of $CH_3CH_2CH_2CH(CH_3)COCH_3$ is

A. isohexanone

B. heptanone

C. hexanone-5

D. 3-Methylhexan-2-one.

Answer: D

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152. IUPAC name of $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH - \underset{\underset{O}{||}}{C} - CH_3$ is

A. 4-methylpent-3-en-2-one

B. 2-Methylpent-3-en-2-one

C. 3-Methylpent-2-en-1-one

D. none of these.

Answer: A

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153. The compound which does not give iodoform test is

A. Acetophenone

B. Benzophenone

C. $CH_3\underset{\underset{CH_3}{|}}{C}HOH$

D. $CH_3-\underset{\underset{OH}{|}}{C}H-CH_2CH_2CH_3$

Answer: B

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154. The compound which does not give iodoform on treatment with NaOH and iodine is

A. CH_3OH

B. CH_3CH_2OH

C. CH_3CHO

D. $(CH_3)_2CO$

Answer: A

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155. When phenol is treated with $CHCl_3$ and NaOH, the product formed is

A. benzaldehyde

B. salicylaldehyde

C. salicylic acid

D. benzoic acid.

Answer: B

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156. In the following reaction product 'P' is

$$R-\overset{\overset{O}{||}}{C}-Cl \xrightarrow[BaSO_4]{H_2} P.$$

A. RCH_2OH

B. $RCOOH$

C. $RCHO$

D. RCH_3

Answer: C

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157. Bakelite is a product of reaction between

A. formaldehyde and NaOH

B. phenol and methanal

C. aniline and urea

D. phenol and chloroform.

Answer: B

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158. The reaction,

$2CH_3CHO \xrightarrow{Al(OC_2H_5)_3} CH_3COOC_2H_5$ is known as

A. Tischenko reaction

B. Cannizzaro's reaction

C. Knoevenagel reaction

D. Wurtz's reaction

Answer: A

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159. Tollen's reagent is

A. Alkaline mercuric chloride solution

B. Ammoniacal silver nitrate solution

C. Ammonium citrate solution

D. Alkaline potassium permanganate solution.

Answer: B

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160. Hydrolysis of ozonide of but-1-ene gives

A. Ethylene only

B. acetaldebyde and Formaldehyde

C. propionaldehyde and formaldehyde

D. acetaldehyde only

Answer: C

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161. The reagent used to convert $CH \equiv CH.CH_2CH_3$ to $CH_3COCH_2CH_3$ is

A. $H_2 \frac{\emptyset}{H^+}$

B. Hg^{2+} / H_2SO_4

C. $H_2SO_4(\text{conc.}) / H_3PO_4$

D. $K_2Cr_2O_7 / KMnO_4$

Answer: B

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162. The boiling point of acetic acid is higher than expected from its molecular weight because of

A. Association through hydrogen bonding

B. Strong ionizing power

C. Non-polar character

D. Solubility in water.

Answer: A

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163. Acetic acid is a weak acid because

A. It is an organic acid

B. It is a monobasic acid

C. It is unstable

D. It is slightly ionized

Answer: D

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164. The correct order of increasing acidic strength is .....

A. Phenol $<$ Ethanol $<$ Chloroacetic acid $<$ Acetic acid

B. Ethanol $<$ Phenol $<$ Chloroacetic acid $<$ Acetic acid

C. Ethanol $<$ Phenol $<$ Acetic acid $<$ Chloroacetic acid

D. Chloroacetic acid $<$ Acetic acid $<$ Phenol $<$ Ethanol

Answer: C

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165. Compound $Ph - O - \overset{O}{\overset{||}{C}} - Ph$ can be prepared by the reaction of .....

A. Phenol and benzoic acid in the presence of NaOH

B. Phenol and benzoyl chloride in the presence of pyridine

C. Phenol and benzoyl chloride in the presence of $ZnCl_2$

D. Phenol and benzaldehyde in the presence of palladium.

Answer: B

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166. Carboxylic group shows acidic character because

A. it turns blue litmus red

B. it contains OH group

C. it reacts with alkalis to form salts

D. the carboxylate ion is resonance stabilized.

Answer: D

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167. The Hell-Volhard-Zelinsky reaction is used to

A. determine the percentage of halogen in a compound

B. distinguish primary alcohols from secondary alcohols

C. synthesize α-bromoacids

D. synthesize α-hydroxy acids

Answer: C

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168. When chlorine is passed through acetic acid in presence of halogen carrier (red P), it forms

A. acetyl chloride

B. trichloroacetaldehyde (chloral)

C. trichloroacetic acid

D. methyl chloride.

Answer: C

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169. Acetic acid exists as dimer in benzene due to

A. a condensation reaction

B. hydrogen bonding.

C. presence of carbonyl group

D. presence of hydrogen atom at α-carbon atom.

Answer: B

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170. Weakest acid among the following is

A. acetic acid

B. phenol

C. water

D. acetylene

Answer: D

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171. Ester formation involves the reaction of

A. an aldehyde and a ketone

B. an alcohol with RMgX

C. two molecules of an acid with dehydrating agent

D. an acyl halide with an alcohol.

Answer: D

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172. Which of the following reaction is expected to readily give a hydrocarbon product in good yield ?

A. $RCOOK \xrightarrow[\text{Oxidation}]{\text{Electrolytic}}$

B. $RCOOAg \xrightarrow{I_2}$

C. $CH_3CH_3 \xrightarrow{Cl_2 / hv}$

D. $(CH_3)_3CCl \xrightarrow{C_2H_5OH}$

Answer: A

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173. Heating a mixture of sodium benzoate and soda-lime gives

A. benzene

B. methane

C. sodium phenoxide

D. calcium benzoate

Answer: A

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174. Which of the following compounds will react with $NaHCO_3$ solution to give sodium salt and carbon dioxide?

A. Acetic acid

B. n-Hexanol

C. Phenol

D. both (b) and (c).

Answer: A

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175. Chlorination of toluene in presence of light and heat followed by treatment with aqueous NaOH gives

A. o-cresol

B. p-cresol

C. 2, 4-dihydroxytoluene

D. benzoic acid

Answer: D

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176. Which of the following carboxylic acid undergoes decarboxylation easily ?

A. $C_6H_5 - CO - CH_2 - COOH$

B. $C_6H_5 - CO - COOH$

C. $C_6H_5 - \underset{\underset{OH}{|}}{C}H - COOH$

D. $C_6H_5 - \underset{\underset{NH_2}{|}}{C}H - COOH$

Answer: A

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177. $CH_3CH_2COOH \xrightarrow[\text{Red P}]{Br_2} \xrightarrow{NH_3} Y$

Y in the above reaction is

A. lactic acid

B. ethylamine

C. propylamine

D. alanine

Answer: D

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178. When propionic acid is treated with aqueous sodium bicarbonate, CO_2 is liberated. The "C" of CO_2 comes from

A. methyl group

B. carboxylic acid group

C. methylene group

D. bicarbonate

Answer: D

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179. Addition of water to alkynes occurs in acidic medium and in the presence of Hg^{2+} ions as a catalyst. Which of the following products will be formed on addition of water to but-1-yne under these conditions ?

A. $CH_3 - CH_2 - CH_2 - \overset{O}{\overset{|}{C}} - H$

B. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - CH_3$

C. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - OH + CO_2$

D. $CH_3 - \overset{O}{\overset{||}{C}} - OH + H - \overset{O}{\overset{||}{C}} - H$

Answer: B

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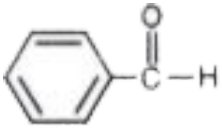
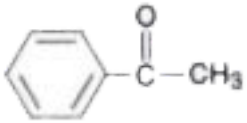
180. Which of the following compounds is most reactive towards nucleophilic addition reactions ?

A. $CH_3 - \overset{\overset{O}{||}}{C} - H$

B. $CH_3 - \overset{\overset{O}{||}}{C} - CH_3$

C. 

D. 

Answer: A

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181. The reagent which does not react with both, acetophenone and benzaldehyde is

A. Sodium hydrogensulfite

B. Phenylhydrazine

C. Fehling's solution

D. Grignard reagent

Answer: A

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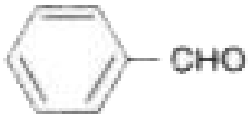
182. Cannizaro's reaction is not given by

A. 

B. 

C. HCHO

D. CH_3CHO

Answer: D

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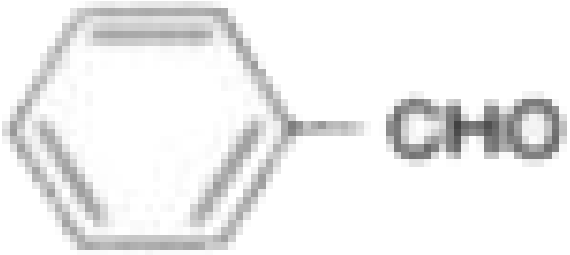
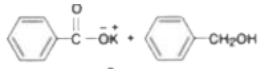
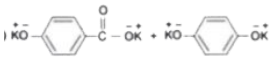
183. Which product is formed when tht, compound

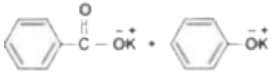


is treated with concentrated aqueous KOH solution?

A. 

B. 

C. 

D. 

Answer: B

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184. $CH_3 - C \equiv CH \xrightarrow[1\%\, HgSO_4]{40\%\, H_2SO_4} A \xrightarrow{\text{isomerisation}} CH_3 - \underset{\underset{O}{||}}{C} - CH_3$

Structure of 'A' and type of isomerism in the above reaction are respectively.

A. Prop-1-en-2-ol, metamerism

B. Prop-1-en-l -ol, tautomerism

C. Prop-2-en-2-ol, geometrical isomerism

D. Prop-1-en-2-ol, tautomerism

Answer: D

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185. Compounds A and C in the following reaction are

$$CH_3CHO \xrightarrow[(ii)\,H_2O]{(i)\,CH_3MgBr} A \xrightarrow{H_2SO_4\,.\,\Delta} (B) \xrightarrow{\text{Hydroboration oxidation}} (C)$$

A. identical

B. positional isomers

C. functional isomers

D. optical isomers.

Answer: B

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186. Which is the most suitable reagent for the following conversion ?

$$CH_3 - CH = CH - CH_2 - \overset{O}{\overset{||}{C}} - CH_3 \rightarrow CH_3 - CH = CH - CH_2 - \overset{O}{\overset{|}{C}}$$

A. Tollens' reagent

B. Benzoyl peroxide

C. I_2 and NaOH solution

D. Sn and NaOH solution

Answer: C

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187. Which of the following compounds will give butanone on oxidation with alkaline $KMnO_4$ solution?

A. Butan-1-ol

B. Butan-2-ol

C. Both of these

D. None of these

Answer: B

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188. In clemmensen Reduction, carbonyl compound is treated with

A. Zinc amalgam+ HCl

B. Sodium amalgam+ HCI

C. Zinc amalgam+ nitric acid

D. Sodium amalgam+ HNO_3

Answer: A

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189. Correct statement by changing underline part of sentence

Aldehydes and ketones both contain a $\underline{\text{carboxyl group}}$,

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190. Correct statement by changing underline part of sentence

According to IUPAC system, aldehydes are named as $\underline{\text{alkanones}}$,

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191. Correct statement by changing underline part of sentence

Hexanal and 2-methylpentanal are functional isomers.

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192. Correct statement by changing underline part of sentence

Pentan-2-one and pentan-3-one are chain isomers.

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193. Correct statement by changing underline part of sentence

Ketones restore the pink colour of Schiff s reagent.

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194. Correct statement by changing underline part of sentence

Aldehydes and ketones undergo nucleophilic substitution.

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195. Correct statement by changing underline part of sentence

Aldehydes can act as strong reducing agents since they themselves can be reduced easily.

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196. Correct statement by changing underline part of sentence

An acid shows the reactions of carbonyl group also.

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197. Correct statement by changing underline part of sentence

Carboxylic acids are $\underline{\text{stronger acids}}$ than mineral acids.

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198. Correct statement by changing underline part of sentence

Acetic acid is a $\underline{\text{stronger acid}}$ than formic acid.

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199. Correct statement by changing underline part of sentence

Formic acid $\underline{\text{undergoes}}$ halogenation.

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200. Correct statement by changing underline part of sentence

2-chloropropanoic acid is $\underline{\text{weaker}}$ than 3-chloropropanoic acid.

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201. The boiling point of propionic acid is more than that of n-butyl alcohol, an alcohol of comparable molecular weight.

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202. Match the following

1. Acetic acid to chloroacetic acid	(*a*) Decarboxylation
2. Formation of oxalic acid	(*b*) Kolbe's electrolytic reaction
3. Sodium acetate to methane	(*c*) Sucrose + Nitric acid
4. Sodium propionate to *n*-butane.	(*d*) HVZ reaction.
5. Fehling solution	(*e*) Rosaniline hydrochloride decolorised by SO_2
6. Benedict's reagent	(*f*) Copper sulfate + sodium potassium tartrate
7. Schiff's reagent	(*g*) Copper sulfate + sodium citrate

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203. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Formaldehyde reacts with Grignard's reagent to form a primary alcohol while acetaldehyde reacts with it to form.....

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204. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

All aldehydes and ketones react with phenylhydrazine in presence of an acid to form.....

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205. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

For the addition reactions with HCN, $NaHSO_3$, aldehydes are....reactive than ketones.

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206. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ammonia and.....react to give hexamethylenetetramine.

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207. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Reduction of Tollons' reagent to a silver mirror is known as.....

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208. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

3-chloropentanal may be represented by the formula.....

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209. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Methanal+ammonia=.....

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210. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ethanol vapours are passed over heated copper and the product is treated with aqueous NaOH. The final product is.....

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211. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzaldehyde undergoes ..... reaction on treatment with concentrated sodium hydroxide because it has .....

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212. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The IUPAC name of acetic acid is ..... and that of propionic acid is .....

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213. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Sodium acetate when fused with ..... forms methane.

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214. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Sodium acetate when subjected to ..... forms ethane and this reaction is called ..... .

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215. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The most common monocarboxylic acid contains two carbon atoms and may be represented by the structural formula .....

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216. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The structural formula for trimethylacetic acid may be drawn as ..... and IUP AC name for the acid is ..... .

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217. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The meso and (+)forms of tartaric acids are ..... isomers.

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218. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The meso and (+)forms of tartaric acids are ..... isomers.

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219. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

In Hell-Vohlard Zelinsky reaction, the carboxylic acids are halogenated at the ..... position by using ..... and .....

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220. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Acetic acid on treatment with sodium carbonate liberates .....

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221. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Ammonium salts of carooxylic acids on heating lose a ..... . molecule and form ..... .

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222. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Chloroacetic acid is ..... than trichloroacetic acid

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223. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Oxalic acid is a ..... acid.

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224. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The formula of the main product obtained when acetic acid reacts with PCl_5 is ....

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225. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Kolbe's electrolysis of ..... produces n-hexane at the anode.

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226. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Acetic acid on reduction with $LiAlH_4$ yields ....

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227. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Higher the ..... or lower the ..... of an acid, stronger is the acid.

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228. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Methyl cyanide on hydrolysis with dil. HCl gives .....

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229. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Vinegar is a dilute solution of ..... .

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230. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Boiling points of acids are ..... than those of alcohols of comparable molecular mass.

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231. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Reaction of benzoyl chloride with H2 and Pd in presence of $BaSO_4$ and S yields .... and reaction is known as ..... reaction.

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232. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzaldehyde reduces ..... but not the ..... .

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233. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

The oxidation of toluene with ..... gives benzaldehyde but with ..... gives benzoic acid.

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234. Fill in the blank by choosing the appropriate word/words from those given in the brackets.

(acetaldehyde, formaldehyde, benzaldehyde, yellow, white, violet, Cannizzaro's, Liebermann, no α-hydrogen atom, 1α-hydrogen atom, 2α-hydrogen atoms, aldol, β-hydroxy aldehyde, aldol condensation, mixed condensation, + I,-I, -M,+ M. decreases, increases, benzalchloride, PCI, SOCh. sec, alcohol, tert, alcohol, phenylhydrozone, semicarbazone, more, less, acetals, ketals, silver mirror, test, urotropine, acetaldehyde cyanohydrin, lactic acid, benzoic acid, Sodalime, ethanoic acid, propanoic acid, electrolysis, Kolbe's electrolytic reaction, carbon dioxide, water, amides, alpha, halogen, phosphorus, weaker, stronger, ethyl alcohol, dibasic,monobasic, 2,2-dimethylpropanoic acid, CH_3COCI, acetic acid, $CH_3CH_2CH_2COOK$, enatiomers, diastereo, K_a pk_a, methanoic acid, higher, lower.)

Benzoic acid does not undergo Friedel-crafts reaction due ..... of the benzene ring by the ..... effect of -COOH groups

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235. The reagent with which both acetaldehyde and acetone react easily is

A. Fehling solution

B. Grignard reagent

C. Schiff's reagent

D. Tollens' reagent

Answer: B

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236. When acetaldehyde is heated with Fehling solution, it gives a precipitate of

A. Cu

B. CuO

C. Cu_2O

D. $Cu + CuO + Cu_2O$

Answer: C

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237. Cannizzaro reaction is not given by

A. trimethylacetaldehyde

B. acetaldehyde

C. benzaldehyde

D. formaldehyde.

Answer: B

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238. A compound that gives positive iodoform test is

A. 1-pentanol

B. 2-pentanone

C. 3-pentanone

D. pentanal

Answer: B

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239. The compound oxidised to prepare methyl ethyl ketone is

A. 2-Propanol

B. 1-Butanol

C. 2-Butanol

D. t-Butyl alcohol.

Answer: C

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240. The formation of cyanohydrin from a ketone is an example of

A. electrophilic addition

B. nucleophilic addition

C. nucleophilic substitution

D. electrophilic substitution

Answer: B

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241. Treatment of propionaldehyde with dil. NaOH solution gives

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CHOHCH(CH_3)CHO$

C. $CH_3CH_2CHOHCH_2CH_2CHO$

D. $CH_3CH_2COCH_2CH_2CHO$

Answer: B

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242. Hydrogenation of benzoyl chloride in the presence of Pd on $BaSO_4$ gives

A. Benzyl alcohol

B. Benzaldehyde

C. Benzoic acid

D. Phenol.

Answer: B

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243. The aldol condensation of acetaldehyde results in the formation of

A. $CH_3 - \underset{\underset{O}{||}}{C} - \underset{\underset{OH}{|}}{C}H - CH_3$

B. $CH_3\underset{\underset{OH}{|}}{C}H - CH_2 - \underset{\underset{O}{||}}{-}H$

C. $CH_3CH_2\underset{\underset{OH}{|}}{C}H - \underset{\underset{O}{||}}{-}H$

D. $CH_3CH_2OH + CH_3COOH$

Answer: B

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244. Positive iodofonn test is given by

A. acetamide

B. acetophenone

C. methylene

D. 1-hydroxypropane.

Answer: B

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245. Clemmensen reduction of a ketone is carried out in presence of

A. H_2 with Pd as catalyst

B. glycol with KOH

C. $LiAlH_4$ in ether

D. $Zn - Hg$ with HCl

Answer: D

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246. Acetone on heating with conc. H_2SO_4 mainly gives

A. mesitylene

B. mesityl oxide

C. toluene

D. xylene.

Answer: A

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247. Schiff reagent gives pink colour with

A. acetaldehyde

B. acetone

C. acetic acid

D. methyl acetone

Answer: A

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248. The reaction of benzaldehyde with alkali gives

A. phenol+ benzoate

B. Benzene+benzyl alcohol

C. benzyl alcohol+ sodium benzoate

D. phenol+ benzene.

Answer: C

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249. The compound used in the treatment of lead poisoning is :

A. Formalin

B. Trioxane

C. Para-aldehyde

D. Para-formaldehyde.

Answer: C

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250. A cyanohydrin of a compound X on hydrolysis gives lactic acid. The X is

A. $HCHO$

B. CH_3CHO

C. $(CH_3)_2CO$

D. $C_6H_5CH_2CHO$

Answer: B

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251. The reaction of formaldehyde with Grignard's reagent followed by hydrolysis yields

A. a primary alcohol

B. a secondary alcohol

C. a tertiary alcohol

D. a phenol.

Answer: A

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252. IUPAC name of $CH_3CH_2CH_2CH(CH_3)COCH_3$ is

A. isohexanone

B. heptanone

C. hexanone-5

D. 3-Methylhexan-2-one.

Answer: D

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253. IUPAC name of $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH - \underset{\underset{O}{||}}{C} - CH_3$ is

A. 4-methylpent-3-en-2-one

B. 2-Methylpent-3-en-2-one

C. 3-Methylpent-2-en-1-one

D. none of these.

Answer: A

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254. The compound which does not give iodoform test is

A. Acetophenone

B. Benzophenone

C. $CH_3\underset{\underset{CH_3}{|}}{C}HOH$

D. $CH_3 - \underset{\underset{OH}{|}}{C}H - CH_2CH_2CH_3$

Answer: B

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255. The compound which does not give iodoform on treatment with NaOH and iodine is

A. CH_3OH

B. CH_3CH_2OH

C. CH_3CHO

D. $(CH_3)_2CO$

Answer: A

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256. When phenol is treated with $CHCl_3$ and NaOH, the product formed is

A. benzaldehyde

B. salicylaldehyde

C. salicylic acid

D. benzoic acid.

Answer: B

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257. In the following reaction product 'P' is

$$R-\overset{\overset{O}{||}}{C}-Cl \xrightarrow[BaSO_4]{H_2} P.$$

A. RCH_2OH

B. $RCOOH$

C. $RCHO$

D. RCH_3

Answer: C

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258. Bakelite is a product of reaction between

A. formaldehyde and NaOH

B. phenol and methanal

C. aniline and urea

D. phenol and chloroform.

Answer: B

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259. The reaction,

$2CH_3CHO \xrightarrow{Al(OC_2H_5)_3} CH_3COOC_2H_5$ is known as

A. Tischenko reaction

B. Cannizzaro's reaction

C. Knoevenagel reaction

D. Wurtz's reaction

Answer: A

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260. Tollen's reagent is

A. Alkaline mercuric chloride solution

B. Ammoniacal silver nitrate solution

C. Ammonium citrate solution

D. Alkaline potassium permanganate solution.

Answer: B

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261. Hydrolysis of ozonide of but-1-ene gives

A. Ethylene only

B. acetaldebyde and Formaldehyde

C. propionaldehyde and formaldehyde

D. acetaldehyde only

Answer: C

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262. The reagent used to convert $CH \equiv CH.CH_2CH_3$ to $CH_3COCH_2CH_3$ is

A. $H_2 \frac{\emptyset}{H^+}$

B. Hg^{2+} / H_2SO_4

C. $H_2SO_4(\text{conc.}) / H_3PO_4$

D. $K_2Cr_2O_7 / KMnO_4$

Answer: B

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263. The boiling point of acetic acid is higher than expected from its molecular weight because of

A. Association through hydrogen bonding

B. Strong ionizing power

C. Non-polar character

D. Solubility in water.

Answer: A

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264. Acetic acid is a weak acid because

A. It is an organic acid

B. It is a monobasic acid

C. It is unstable

D. It is slightly ionized

Answer: D

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265. The correct order of increasing acidic strength is .....

A. Phenol $<$ Ethanol $<$ Chloroacetic acid $<$ Acetic acid

B. Ethanol $<$ Phenol $<$ Chloroacetic acid $<$ Acetic acid

C. Ethanol $<$ Phenol $<$ Acetic acid $<$ Chloroacetic acid

D. Chloroacetic acid $<$ Acetic acid $<$ Phenol $<$ Ethanol

Answer: C

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266. Compound $Ph - O - \overset{\overset{O}{||}}{C} - Ph$ can be prepared by the reaction of

A. Phenol and benzoic acid in the presence of NaOH

B. Phenol and benzoyl chloride in the presence of pyridine

C. Phenol and benzoyl chloride in the presence of $ZnCl_2$

D. Phenol and benzaldehyde in the presence of palladium.

Answer: B

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267. Carboxylic group shows acidic character because

A. it turns blue litmus red

B. it contains OH group

C. it reacts with alkalis to form salts

D. the carboxylate ion is resonance stabilized.

Answer: D

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268. The Hell-Volhard-Zelinsky reaction is used to

A. determine the percentage of halogen in a compound

B. distinguish primary alcohols from secondary alcohols

C. synthesize α-bromoacids

D. synthesize α-hydroxy acids

Answer: C

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269. When chlorine is passed through acetic acid in presence of halogen carrier (red P), it forms

A. acetyl chloride

B. trichloroacetaldehyde (chloral)

C. trichloroacetic acid

D. methyl chloride.

Answer: C

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270. Acetic acid exists as dimer in benzene due to

A. a condensation reaction

B. hydrogen bonding.

C. presence of carbonyl group

D. presence of hydrogen atom at α-carbon atom.

Answer: B

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271. Weakest acid among the following is

A. acetic acid

B. phenol

C. water

D. acetylene

Answer: D

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272. Ester formation involves the reaction of

A. an aldehyde and a ketone

B. an alcohol with RMgX

C. two molecules of an acid with dehydrating agent

D. an acyl halide with an alcohol.

Answer: D

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273. Which of the following reaction is expected to readily give a hydrocarbon product in good yield ?

A. $RCOOK \xrightarrow[\text{Oxidation}]{\text{Electrolytic}}$

B. $RCOOAg \xrightarrow{I_2}$

C. $CH_3CH_3 \xrightarrow{Cl_2 / hv}$

D. $(CH_3)_3CCl \xrightarrow{C_2H_5OH}$

Answer: A

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274. Heating a mixture of sodium benzoate and soda-lime gives

A. benzene

B. methane

C. sodium phenoxide

D. calcium benzoate

Answer: A

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275. Which of the following compounds will react with $NaHCO_3$ solution to give sodium salt and carbon dioxide?

A. Acetic acid

B. n-Hexanol

C. Phenol

D. both (b) and (c).

Answer: A

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276. Chlorination of toluene in presence of light and heat followed by treatment with aqueous NaOH gives

A. o-cresol

B. p-cresol

C. 2, 4-dihydroxytoluene

D. benzoic acid

Answer: D

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277. Which of the following carboxylic acid undergoes decarboxylation easily ?

A. $C_6H_5 - CO - CH_2 - COOH$

B. $C_6H_5 - CO - COOH$

C. $C_6H_5 - \underset{\underset{OH}{|}}{C}H - COOH$

D. $C_6H_5 - \underset{\underset{NH_2}{|}}{C}H - COOH$

Answer: A

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278. $CH_3CH_2COOH \xrightarrow[\text{Red P}]{Br_2} \xrightarrow{NH_3} Y$

Y in the above reaction is

A. lactic acid

B. ethylamine

C. propylamine

D. alanine

Answer: D

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279. When propionic acid is treated with aqueous sodium bicarbonate, CO_2 is liberated. The "C" of CO_2 comes from

A. methyl group

B. carboxylic acid group

C. methylene group

D. bicarbonate

Answer: D

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280. Addition of water to alkynes occurs in acidic medium and in the presence of Hg^{2+} ions as a catalyst. Which of the following products will be formed on addition of water to but-1-yne under these conditions ?

A. $CH_3 - CH_2 - CH_2 - \overset{O}{\overset{|}{C}} - H$

B. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - CH_3$

C. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - OH + CO_2$

D. $CH_3 - \overset{O}{\overset{||}{C}} - OH + H - \overset{O}{\overset{||}{C}} - H$

Answer: B

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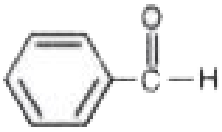
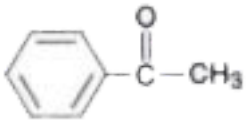
281. Which of the following compounds is most reactive towards nucleophilic addition reactions ?

A. $CH_3 - \overset{O}{\overset{||}{C}} - H$

B. $CH_3 - \overset{O}{\overset{||}{C}} - CH_3$

C. 

D. 

Answer: A

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282. The reagent which does not react with both, acetophenone and benzaldehyde is

A. Sodium hydrogensulfite

B. Phenylhydrazine

C. Fehling's solution

D. Grignard reagent

Answer: A

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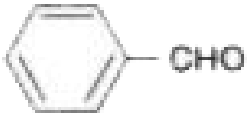
283. Cannizaro's reaction is not given by

A. 

B. 

C. HCHO

D. CH_3CHO

Answer: D

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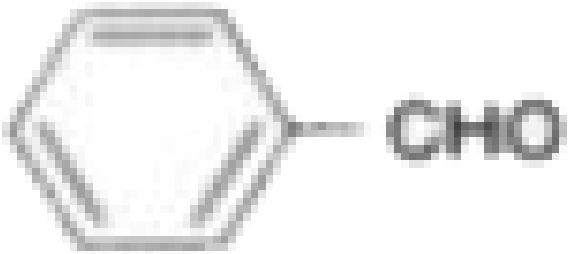
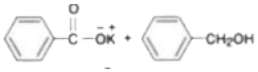
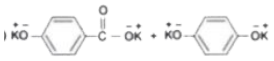
284. Which product is formed when tht, compound

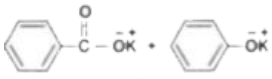


is treated with concentrated aqueous KOH solution?

A. 

B. 

C. 

D. 

Answer: B

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285. $CH_3 - C \equiv CH \xrightarrow[1\%\, HgSO_4]{40\%\, H_2SO_4} A \xrightarrow{\text{isomerisation}} CH_3 - \underset{\underset{O}{||}}{C} - CH_3$

Structure of 'A' and type of isomerism in the above reaction are respectively.

A. Prop-1-en-2-ol, metamerism

B. Prop-1-en-l -ol, tautomerism

C. Prop-2-en-2-ol, geometrical isomerism

D. Prop-1-en-2-ol, tautomerism

Answer: D

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286. Compounds A and C in the following reaction are

$CH_3CHO \xrightarrow[(ii)\, H_2O]{(i)\, CH_3MgBr} A \xrightarrow{H_2SO_4 .\, \Delta} (B) \xrightarrow{\text{Hydroboration oxidation}} (C)$

A. identical

B. positional isomers

C. functional isomers

D. optical isomers.

Answer: B

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287. Which is the most suitable reagent for the following conversion ?

$$CH_3 - CH = CH - CH_2 - \overset{O}{\overset{||}{C}} - CH_3 \rightarrow CH_3 - CH = CH - CH_2 - \overset{O}{\overset{|}{C}}$$

A. Tollens' reagent

B. Benzoyl peroxide

C. I_2 and NaOH solution

D. Sn and NaOH solution

Answer: C

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288. Which of the following compounds will give butanone on oxidation with alkaline $KMnO_4$ solution?

A. Butan-1-ol

B. Butan-2-ol

C. Both of these

D. None of these

Answer: B

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289. In clemmensen Reduction, carbonyl compound is treated with

A. Zinc amalgam+ HCl

B. Sodium amalgam+ HCI

C. Zinc amalgam+ nitric acid

D. Sodium amalgam+ HNO_3

Answer: A

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290. Correct statement by changing underline part of sentence

Aldehydes and ketones both contain a carboxyl group,

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291. Correct statement by changing underline part of sentence

According to IUPAC system, aldehydes are named as alkanones,

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292. Correct statement by changing underline part of sentence

Hexanal and 2-methylpentanal are functional isomers.

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293. Correct statement by changing underline part of sentence

Pentan-2-one and pentan-3-one are chain isomers.

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294. Correct statement by changing underline part of sentence

Ketones restore the pink colour of Schiff s reagent.

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295. Correct statement by changing underline part of sentence

Aldehydes and ketones undergo nucleophilic substitution.

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296. Correct statement by changing underline part of sentence

Aldehydes can act as strong reducing agents since they themselves can be $\underline{\text{reduced easily}}$.

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297. Correct statement by changing underline part of sentence

An acid $\underline{\text{shows}}$ the reactions of carbonyl group also.

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298. Correct statement by changing underline part of sentence

Carboxylic acids are $\underline{\text{stronger acids}}$ than mineral acids.

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299. Correct statement by changing underline part of sentence

Acetic acid is a $\underline{\text{stronger acid}}$ than formic acid.

Watch Video Solution

300. Correct statement by changing underline part of sentence

Formic acid $\underline{\text{undergoes}}$ halogenation.

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301. Correct statement by changing underline part of sentence

2-chloropropanoic acid is $\underline{\text{weaker}}$ than 3-chloropropanoic acid.

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302. The boiling point of propionic acid is more than that of n-butyl alcohol, an alcohol of comparable molecular weight.

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303. Match the following

1. Acetic acid to chloroacetic acid	(*a*) Decarboxylation
2. Formation of oxalic acid	(*b*) Kolbe's electrolytic reaction
3. Sodium acetate to methane	(*c*) Sucrose + Nitric acid
4. Sodium propionate to *n*-butane.	(*d*) HVZ reaction.
5. Fehling solution	(*e*) Rosaniline hydrochloride decolorised by SO_2
6. Benedict's reagent	(*f*) Copper sulfate + sodium potassium tartrate
7. Schiff's reagent	(*g*) Copper sulfate + sodium citrate

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EXERCISE (PART-II DESCRIPTIVE QUESTIONS) (VERY SHORT QUESTIONS)

1. Write the IUPAC name of

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2. Draw the structure of 4-methylpent-3-en-2-one

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3. Write the IUPAC name of

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4. Write the IUPAC name of $CH_3COCH_2COCH_3$.

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5. Write the IUPAC name of

$$CH_3CH(CH_3)CH_2C(CH_3)_2 - COCH_3$$

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6. Write the IUPAC name of the compound:

$$CH_3 - \underset{\underset{CH_3}{|}}{C}H - CO - \underset{\underset{CH_3}{|}}{C}H - CH_3$$

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EXERCISE (PART-II DESCRIPTIVE QUESTIONS) (SHORT QUESTIONS)

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2. Name the products obtained by:

heating calcium formate

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3. Name the products obtained by:

heating mixture of calcium formate and calcium acetate.

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4. How will you convert acetyl chloride to

acetaldehyde

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5. How will you convert acetyl chloride to

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6. Write one chemical equation for each, to illustrate the following reactions:

Rosenmund reduction

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7. Write one chemical equation for each, to illustrate the following reactions:

Cannizzaro reaction.

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8. Give chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone.

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9. Give chemical tests to distinguish between the following pairs of compounds :

Benzaldehyde and benzoic acid.

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10. State reasons for the following situations :

Monochloroethanoic acid is a weaker acid than dichloroethanoic acid.

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11. State reasons for the following situations :

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12. Write chemical tests to distinguish between the following pairs of compounds :

Acetophenone and benzophenone.

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13. Write chemical tests to distinguish between the following pairs of compounds :

Ethanal and propanal.

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14. State chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone

Watch Video Solution

15. State chemical tests to distinguish between the following pairs of compounds :

Phenol and benzoic acid.

Watch Video Solution

16. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

17. Give chemical tests to distinguish between:

Propanone and propanal

Watch Video Solution

18. How will you bring about the following conversions :

Ethanol to 3-hydroxybutanal

Watch Video Solution

19. How will you bring about the following conversions :

Benzaldehyde to benzophenone?

Watch Video Solution

20. Illustrate the following name reactions by giving example:

Cannizzaro's reaction

Watch Video Solution

21. Illustrate the following name reactions by giving example:

Clemmensen reduction

Watch Video Solution

22. Give reasons for the following:

Treatment of benzaldehyde with HCN gives a mixture of two isomers which cannot be separated even by careful fractional distillation.

Watch Video Solution

23. Give reasons for the following:

Sodium bisulfite is used for the purification of aldehydes and ketones.

Watch Video Solution

24. Write the steps and conditions involved in the following conversions:

acetophenone to 2-phenyl-2-butanol.

Watch Video Solution

25. Write the steps and conditions involved in the following conversions:

Propyne to acetone.

Watch Video Solution

26. How would you bring about the following conversions:

Propanal to butanone

Watch Video Solution

27. How would you bring about the following conversions:

Benzaldehyde to benzophenone

Watch Video Solution

28. Write the structural formulae of the following :

Pinacol

Watch Video Solution

29. Write the structural formulae of the following :

Pinacolone(t-butyl methyl ketone)

Watch Video Solution

30. Write the structural formulae of the following :

Di-isopropyl ketone

Watch Video Solution

31. Write the structural formulae of the following :

Methyl vinyl Ketone

Watch Video Solution

32. Dipole moments of aldehydes and ketones are higher than the alcohols. Why?

Watch Video Solution

33. Write the chemical equation when acetone reacts with ethanol.

Watch Video Solution

34. Ethanal is more reactive towards nucleophilic addition reaction than propanone. Why ?

Watch Video Solution

35. Benzaldehyde is less reactive than acetaldehyde towards nucleophilic addition reactions. Justify.

Watch Video Solution

36. How amines are prepared from aldehydes?

Watch Video Solution

37. Explain the following reactions :

Cannizzaro reaction

Watch Video Solution

38. Explain the following reactions :

Aldol condensation

Watch Video Solution

39. Why do aldehydes and ketones undergo nucleophilic addition reactions. Give one example.

Watch Video Solution

40. How will you convert formaldehyde to acetaldehyde ?

Watch Video Solution

41. How aldehydes and ketones are distinguished ? Give two chemical reactions.

Watch Video Solution

42. Name the reagents that can oxidise unsaturated aldehydes to unsaturated carboxylic acids.

Watch Video Solution

43. How will you carry out the following conversions :

Acetone to ter-butyl alcohol

Watch Video Solution

44. How will you carry out the following conversions :

Acetaldehyde to lactic acid.

Watch Video Solution

45. What is active alpha hydrogen atom ? Name one reaction that takes place due to the presence of such a hydrogen.

Watch Video Solution

46. Why can't ketones be prepared from $R-\overset{O}{\overset{||}{C}}-Cl$ and Grignard reagent, RMgCl, altough they can be prepared from RCOCl and R_2Cd?

Watch Video Solution

47. What are acetals ? Give one method of their preparation.

Watch Video Solution

48. Describe two nucleophilic addition reactions of carbonyl compounds.

Watch Video Solution

49. Why do aldehydes and ketones undergo a number of addition reactions ?

Watch Video Solution

50. The order of reactivity of carbonyl compounds for nucleophilic addition is

Watch Video Solution

51. Arange the following in increasing order of reactivity towards nucleophilic addition:

$HCHO, CH_3CHO, CH_3COCH_3$

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52. How is benzaldehyde prepared from:

Toluene

Watch Video Solution

53. How is benzaldehyde prepared from:

Benzoic acid

Watch Video Solution

54. How are the following conversions carried out ?

Acetophenone from benzene

Watch Video Solution

55. How are the following conversions carried out ?

Benzaldehyde from toluene

Watch Video Solution

56. What products are formed when acetic acid is reacted separately with phosphorus trichloride and chlorine in presence of phosphorus as catalyst ?

Watch Video Solution

57. How is beenzaldehyde prepared from Friedel-Craft's reaction?

Watch Video Solution

58. State giving reasons what products are likely to be formed in the bromination of benzoic acid.

Watch Video Solution

59. What happens when sodium benzoate is heated with soda lime?

Watch Video Solution

60. Lactic acid, $CH_3CHOH.COOH$ exists in two optically active forms. Explain.

Watch Video Solution

61. Which of the following compounds will be obtained on treatment of propanal with dilute NaOH solution and why ?

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CH(OH)CH(CH_3)CHO$

C. $CH_3CH_2CH(OH)CH_2CH_2CHO$

D. $CH_3CH_2COCH_2CHO$

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62. Which one of the following two compounds will give Haloform reaction and why ?

$CH_3CHO, HCHO$

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63. Identify A and B :

$$CH_3MgBr \xrightarrow[(ii)\ H_2O]{(i)\ \text{dry ice}} A \xrightarrow[\text{Heat}]{\text{Soda lime}} B$$

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64. Why is acetic acid more acidic than ethanol?

Watch Video Solution

65. How will you convert benzoyl chloride to benzaldehyde?

Watch Video Solution

66. Give one chemical test to distinguish between acetaldehyde and acetone.

Watch Video Solution

67. How can the following conversions be carried out ?

Ethanal to Acetone

Watch Video Solution

68. How can the following conversions be carried out ?

Benzene to Acetophenone

Watch Video Solution

69. How can the following conversions be carried out ?

Benzoic acid to Benzaldehyde

Watch Video Solution

70. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each

case.

Acetaldehyde to ethyl alcohol

Watch Video Solution

71. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Acetaldehyde to isopropyl alcohol

Watch Video Solution

72. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Acetaldehyde to isopropyl alcohol

Watch Video Solution

73. Write the formulae of the products that will be formed when propanal reacts with:

sodium bisulfite

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74. Write the formulae of the products that will be formed when propanal reacts with:

methyl magnesium bromide

Watch Video Solution

75. Write the formulae of the products that will be formed when propanal reacts with:

hydrogen in the presence of nickel catalyst.

Watch Video Solution

76. Predict the formulae of the products of the following reactions:

$CH_3CH_2CHO + Cl_2 \rightarrow$

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77. Predict the formulae of the products of the following reactions:

`CH(3)COCH(3)+HCN

Watch Video Solution

78. Predict the formulae of the products of the following reactions:

$C_6H_5COCH_3 + NH_2OH \rightarrow$

Watch Video Solution

79. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Formaldehyde

Watch Video Solution

80. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Acetaldehyde

Watch Video Solution

81. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Acetone.

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82. How does acetaldehyde react with:

$NaHSO_3$

Watch Video Solution

83. How does acetaldehyde react with:

HCN

Watch Video Solution

84. How does acetaldehyde react with:

C_2H_5MgBr

Watch Video Solution

85. Write chemical equations for reaction of acetaldehyde with

Ammoniacal $AgNO_3$

Watch Video Solution

86. Write chemical equations for reaction of acetaldehyde with

NH_2OH

Watch Video Solution

87. Write chemical equations for reaction of acetaldehyde with

HCN

Watch Video Solution

88. How will you account for the following:

Formaldehyde gives Cannizzaro's reaction but acetaldehyde does not.

Watch Video Solution

89. How will you account for the following:

During preparation of ammonia derivatives from aldehydes and ketones,

pH of the reaction is carefully controlled.

Watch Video Solution

90. Give balanced equations for the following name reactions :

Aldol condensation.

Watch Video Solution

91. Complete the following equations giving the names of the reactants and the products :

$(CH_3COO)_2Ca \xrightarrow{\Delta}$

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92. Complete the following equations giving the names of the reactants and the products :

$C_6H_5CHCl_2 + NaOH(aq) \xrightarrow{\text{Heat}}$

Watch Video Solution

93. Complete the following equations giving the names of the reactants and the products :

$2HCHO + NaOH \rightarrow$

Watch Video Solution

94. Complete the following equations giving the names of the reactants and the products :

$CH_3COCl + H_2 \xrightarrow{Pd / BaSO_4}$

Watch Video Solution

95. You are provided with four reagents:

$LiAlH_4$, $I_2 / NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the

compounds in each of the following pairs:

CH_3CHO and CH_3COCH_3

Watch Video Solution

96. You are provided with four reagents:

$LiAlH_4$, $I_2/NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

CH_3CHO and C_6H_5CHO

Watch Video Solution

97. You are provided with four reagents:

$LiAlH_4$, $I_2/NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

$C_6H_5COCH_3$ and $C_6H_5COC_6H_5$

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98. How will you obtain formic acid from the following:

Carbon monoxide

Watch Video Solution

99. How will you obtain formic acid from the following:

Oxalic acid

Watch Video Solution

100. How will you obtain formic acid from the following:

Formaldehyde.

Watch Video Solution

101. Give three examples to illustrate reducing nature of formic acid.

Watch Video Solution

102. How are the following conversions carried out ?

Acetic acid from acetylene

Watch Video Solution

103. How are the following conversions carried out ?

Butanoic acid from butan-1-ol

Watch Video Solution

104. How are the following conversions carried out ?

Acetic acid from ethyl alcohol

Watch Video Solution

105. How is acetic acid prepared from Methyl iodide ?

Watch Video Solution

106. How is acetic acid prepared from Acetonitrile?

Watch Video Solution

107. Starting from methylmagnesium bromide, how will you synthesise acetic acid?

Watch Video Solution

108. How will you convert:

Ethyl chloride to propanoic acid ?

Watch Video Solution

109. Conversion of Bromobenzene to benzoic acid

Watch Video Solution

110. Give equations for the reaction of acetic acid with

PCl_5

Watch Video Solution

111. Give equations for the reaction of acetic acid with

$SOCl_2$

Watch Video Solution

112. How will you obtain the following from the acetic acid?

Ethyl acetate

Watch Video Solution

113. How will you obtain the following from the acetic acid?

Acetaldehyde

Watch Video Solution

114. How will you obtain the following from the acetic acid?

Acetamide

Watch Video Solution

115. How will you obtain the following from the acetic acid?

Acetic anhydride ?

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116. Write the chemical reactions of acetic acid with

Zn metal

Watch Video Solution

117. Write the chemical reactions of acetic acid with

Na metal

Watch Video Solution

118. Write the chemical reactions of acetic acid with

$NaHCO_3$

Watch Video Solution

119. Write the chemical reactions of acetic acid with

HI / P_4 at 473K

Watch Video Solution

120. When potassium acetate is electrolysed, we get

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121. What happens when sodium acetate is heated with sodalime

Watch Video Solution

122. What happens when:

Silver acetate is'refluxed with bromine in presence of CCl_4

Watch Video Solution

123. What is the reaction when ammonium acetate is refluxed with the glacial acetic acid?

Watch Video Solution

124. Write the balanced chemical equation for the reaction so phosphorus pentachloride with formic acid

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125. An organic compound contains carbon 40%, oxygen 53.3% and hydrogen 6.7%. If the vapour density of the compound is 30, what is its molecular formula ? Write the probable structures and name of the conmpound.

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126. How will you distinguish between the following pairs? Give one chemical test for each pair.

Acetic acid and ethyl alcohol

Watch Video Solution

127. Give one chemical test to distinguish between the following pairs of compound:

Formic acid and acetic acid.

Watch Video Solution

128. Write one chemical test to distinguish between phenol and benzoic acid.

Watch Video Solution

129. Give reasons for the following:

The bond length of C =O bond in carboxylic acids is slightly larger than that in aldehydes and ketones. Why?

Watch Video Solution

130. Complete the following equations:

$C_6H_5COOH + Na_2CO_3(aq) \rightarrow$

Watch Video Solution

131. Complete the following equations:

$C_6H_5COOH + SOCl_2 \rightarrow$

Watch Video Solution

132. Complete the following equations:

$CH_3CO\overline{O} + H_2O \xrightarrow{\text{electrolysis}}$

Watch Video Solution

133. Compare the acid strengths of the following:

Formic acid and acetic acid

Watch Video Solution

134. Compare the acid strengths of the following:

Acetic acid and propanoic acid

Watch Video Solution

135. Compare the acid strengths of the following:

Benzoic acid and formic acid

Watch Video Solution

136. Giving an appropriate example, explain how the presence of a substituent on aliphatic chain of a carboxylic acid effects its acid strength.

Watch Video Solution

137. How can ethanoic acid converted into propanoic acid and vice versa?

Watch Video Solution

138. How will you explain that formic acid is stronger than acetic acid?

Watch Video Solution

139. Chloroacetic acid has lower pK_a value than acetic acid.

Watch Video Solution

140. Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of comparable molecular mass. It is due to their

Watch Video Solution

141. Electrophilic substitution in benzoic acid takes place at meta position why ?

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142. Write short notes on :

Decarboxylation of acids

Watch Video Solution

143. Explain why carboxylic acids are stronger acids than phenols.

Watch Video Solution

144. Give a brief account of HVZ reaction.

Watch Video Solution

145. How will you get acetone from acetic acid?

Watch Video Solution

146. Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of comparable molecular mass. It is due to their

Watch Video Solution

147. Arrange the following compounds in increasing order of their acid strength.

$CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH, (CH_3)_2CHCOOH,$

Watch Video Solution

148. (a) Arrange the following in an increasing order of their indicated property.

(i) Benzoic acid ,4- Nitrobenzoc acid ,3,4 - Dinitrobenzoic acid, 4-Methoxybenzoic acid (acid strength)

(ii) $CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH,$

$(CH_3)_2CHCOOH, CH_3CH_2CH_2COOH$ (acid strength)

(b) How would you bring about the following conversions :

(i) Propanone to propene

(ii) Benzoic acid to Benzaldehyde

(iii) Bromobenzene to 1- phenylethanol

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149. What is Tollens' reagent ? How can acetaldehyde and acetone be distinguished with its help?

Watch Video Solution

150. Which one between HCHO and CH_3CHO does not contain α-H atom ? What happens when the compound which contains α-H atom reacts with dilute NaOH ?

Watch Video Solution

151. Write short notes on the following:

Aldol condensation

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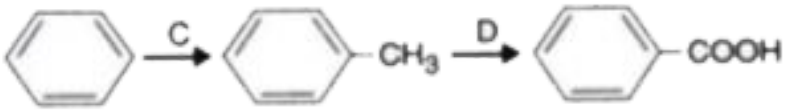
152. Write short notes on the following:

Rosenmund reduction

Watch Video Solution

153. Identify the reagents with conditions in the following reactions (C-F):



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154. Identify the reagents with conditions in the following reactions (C-F):

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155. What is Brady's reagent ? Write down one if its uses.

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156. Name one organic compound which is acidic as well as reducing agent. Give one example each of the properties.

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157. Write the product when acetone is heated with barium hydroxide.

Watch Video Solution

158. Identify A and B:

Watch Video Solution

159. Which organic compound is fomed when toluene is reacted with CrO_2Cl_2 in CCl_4 medium and the product is decomposed with water ? What happens when the organic compound which is formed is heated with HCHO and 50% NaOH solution?

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160. How will you bring about the following conversions :

Ethanol to 3-hydroxybutanal

Watch Video Solution

161. How will you bring about the following conversions :

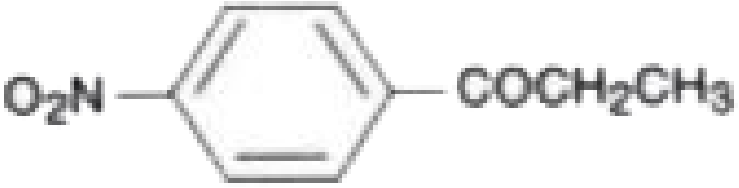
Benzaldehyde to benzophenone?

Watch Video Solution

162. Give the IUPAC names of the following:

Watch Video Solution

163. Give the IUPAC names of the following:



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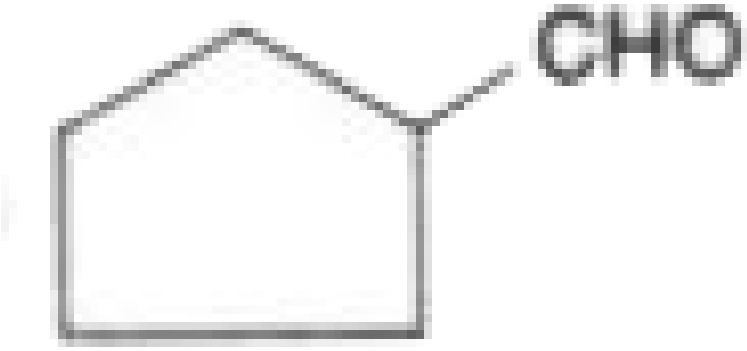
164. Give the IUPAC names of the following:



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165. Give one example of each of the following reactions:

Bouveault-Blanc reduction

Watch Video Solution

166. Give Examples of the following:

Clemmenson reduction

Watch Video Solution

167. Give Examples of the following:

Saponification reaction

Watch Video Solution

168. Give Examples of the following:

Crossed-Cannizzaro reaction

Watch Video Solution

169. Convert:

$CH_3COOH \rightarrow CH_3COCl$

Watch Video Solution

170. Convert:

$CH_3CH_2COOH \rightarrow CH_3CH_2Br$

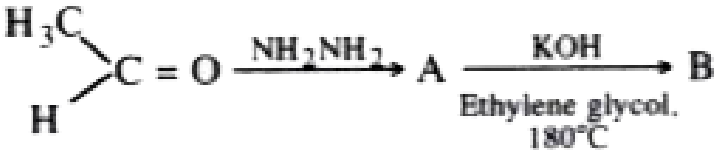
Watch Video Solution

171. Convert:

$RCN \rightarrow RCHO$

Watch Video Solution

172. Identify A, B in the following reactions:



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173. What happens when formic acid is heated with conc. H_2SO_4?

Watch Video Solution

174. Illustrate the following reactions giving suitable example in each case

:

(i) Clemmensen reduction

(ii) Hell-Volhard-Zelinsky reaction.

(b) How are the following conversions carried out ?

(i) Ethylcyanide to ethanoic acid

(ii) Butanol to Butanoic acid

(iii) Benzoic acid to m-bromobenzoic acid

Watch Video Solution

175. Illustrate the following reactions giving suitable example in each case

:

(i) Clemmensen reduction

(ii) Hell-Volhard-Zelinsky reaction.

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(ii) Butanol to Butanoic acid

(iii) Benzoic acid to m-bromobenzoic acid

Watch Video Solution

176. (a) Arrange the following in an increasing order of their indicated property.

(i) Benzoic acid ,4- Nitrobenzoc acid ,3,4 - Dinitrobenzoic acid, 4-Methoxybenzoic acid (acid strength)

(ii) $CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH,$

$(CH_3)_2CHCOOH, CH_3CH_2CH_2COOH$ (acid strength)

(b) How would you bring about the following conversions :

(i) Propanone to propene

(ii) Benzoic acid to Benzaldehyde

(iii) Bromobenzene to 1- phenylethanol

Watch Video Solution

177. Arrange the following compounds in an increasing order of their acid strengths :

$(CH_3)_2CHCOOH, CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH$

Watch Video Solution

178. Explain the mechanism of the following reactions :

(i) Addition of Grignard reagent to a carbonyl compound forming an adduct followed by hydrolysis.

(ii) Acid catalysed dehydration of alcohol forming an alkene.

Watch Video Solution

179. Draw the structures of the following compounds.

(i) 3-Methylbutanal

(ii) p-Nitropropiophenone

(iii) p-Methylbenzaldehyde

(iv) 4-Methylpent-3-en-2-one

(v) 4-Chloropentan-2-one

(vi) 3-Bromo-4-phenylpentanoic acid

(vii) p,p'-Dihydroxybenzophenone

(viii) Hex-2-en-4-ynoic acid

Watch Video Solution

180. Illustrate the following reactions giving suitable example in each case

:

(i) Clemmensen reduction

(ii) Hell-Volhard-Zelinsky reaction.

(b) How are the following conversions carried out ?

(i) Ethylcyanide to ethanoic acid

(ii) Butanol to Butanoic acid

(iii) Benzoic acid to m-bromobenzoic acid

Watch Video Solution

181. How would you bring about the following conversions? Write the complete equations in each case.

(i) Ethanal to 3-hydroxybutanal

(ii) Benzaldehyde to benzophenone

Watch Video Solution

182. Write the structures of the main products of the following reactions :

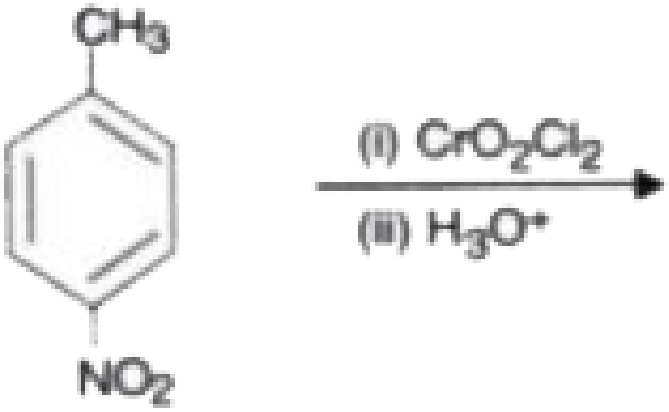
Watch Video Solution

183. Write the structures of the main products of the following reactions :

$$H_3C - C \equiv C - H \xrightarrow{Hg^{2+}, H_2SO_4}$$

Watch Video Solution

184. Write the structures of the main products of the following reactions :



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185. Give one example of each of the following reactions:

Esterification reaction

Watch Video Solution

186. Give one example of each of the following reactions:

Bouveault-Blanc reduction

Watch Video Solution

187. Show the arrowhead steps for the preparation of acetic acid by using the following substances in the correct order: dry $C_2H_5OC_2H_5$, I_2, Mg, $\text{red}P$, CH_3OH, CO_2, dilute HCI.

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188. What are Fehling's solution A and Fehling's solution B? What visual change is observed when they are mixed in equal proportions ? Give one example of the use of the mixture.

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189. Write the products of the following reactions:

$$CH_3COCH_3 \xrightarrow[\text{conc. HCI}]{Zn-Hg}$$

Watch Video Solution

190. Write the products of the following reactions:

$$CH_3COCH_3 \xrightarrow[(b)\,\text{dil.acid}]{(a)\,Mg-Hg,\,\text{dry ether}} ?$$

Watch Video Solution

191. Write the products of the following reactions:

$$CH_3CO_2H \xrightarrow[(b)\,H_2O]{(a)\,Br_2,\,\text{red P}}$$

Watch Video Solution

192. Write the products of the following reactions:

$$CH_3CHO \xrightarrow{HCN} ?$$

Watch Video Solution

193. Write the products of the following reactions:

$$(HCOO)_2Ca \xrightarrow{\text{dry distillation}} ?\ \text{(Organic Compound)}$$

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Watch Video Solution

194. In what respects, the C=C and C =O bonds resemble and differ from each other?

Watch Video Solution

195. Name the products obtained by:

heating calcium formate

Watch Video Solution

196. Name the products obtained by:

heating mixture of calcium formate and calcium acetate.

Watch Video Solution

197. How will you convert acetyl chloride to

acetaldehyde

Watch Video Solution

198. How will you convert acetyl chloride to

acetone?

Watch Video Solution

199. Write one chemical equation for each, to illustrate the following reactions:

Rosenmund reduction

Watch Video Solution

200. Write one chemical equation for each, to illustrate the following reactions:

Cannizzaro reaction.

Watch Video Solution

201. Give chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone.

Watch Video Solution

202. Give chemical tests to distinguish between the following pairs of compounds :

Benzaldehyde and benzoic acid.

Watch Video Solution

203. State reasons for the following situations :

Monochloroethanoic acid is a weaker acid than dichloroethanoic acid.

Watch Video Solution

204. State reasons for the following situations :

Benzoic acid is a stronger acid than ethanoic acid.

Watch Video Solution

205. Write chemical tests to distinguish between the following pairs of compounds :

Acetophenone and benzophenone.

Watch Video Solution

206. Write chemical tests to distinguish between the following pairs of compounds :

Ethanal and propanal.

Watch Video Solution

207. State chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone

Watch Video Solution

208. State chemical tests to distinguish between the following pairs of compounds :

Phenol and benzoic acid.

Watch Video Solution

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Watch Video Solution

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Propanone and propanal

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Treatment of benzaldehyde with HCN gives a mixture of two isomers which cannot be separated even by careful fractional distillation.

Watch Video Solution

216. Give reasons for the following:

Sodium bisulfite is used for the purification of aldehydes and ketones.

Watch Video Solution

217. Write the steps and conditions involved in the following conversions:

acetophenone to 2-phenyl-2-butanol.

Watch Video Solution

218. Write the steps and conditions involved in the following conversions:

Propyne to acetone.

Watch Video Solution

219. How would you bring about the following conversions:

Propanal to butanone

Watch Video Solution

220. How would you bring about the following conversions:

Benzaldehyde to benzophenone

Watch Video Solution

221. Write the structural formulae of the following :

Pinacol

Watch Video Solution

222. Write the structural formulae of the following :

Pinacolone(t-butyl methyl ketone)

Watch Video Solution

223. Write the structural formulae of the following :

Di-isopropyl ketone

Watch Video Solution

224. Write the structural formulae of the following :

Methyl vinyl Ketone

Watch Video Solution

225. Dipole moments of aldehydes and ketones are higher than the alcohols. Why?

Watch Video Solution

226. Write the chemical equation when acetone reacts with ethanol.

Watch Video Solution

227. Ethanal is more reactive towards nucleophilic addition reaction than propanone. Why ?

Watch Video Solution

228. Benzaldehyde is less reactive than acetaldehyde towards nucleophilic addition reactions. Justify.

Watch Video Solution

229. How amines are prepared from aldehydes?

Watch Video Solution

230. Explain the following reactions :

Cannizzaro reaction

Watch Video Solution

231. Explain the following reactions :

Aldol condensation

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Watch Video Solution

233. How will you convert formaldehyde to acetaldehyde ?

Watch Video Solution

234. How aldehydes and ketones are distinguished ? Give two chemical reactions.

Watch Video Solution

235. Name the reagents that can oxidise unsaturated aldehydes to unsaturated carboxylic acids.

Watch Video Solution

236. How will you carry out the following conversions :

Acetone to ter-butyl alcohol

Watch Video Solution

237. How will you carry out the following conversions :

Acetaldehyde to lactic acid.

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238. What is active alpha hydrogen atom ? Name one reaction that takes place due to the presence of such a hydrogen.

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239. Why can't ketones be prepared from $R-\overset{O}{\overset{||}{C}}-Cl$ and Grignard reagent, RMgCl, altough they can be prepared from RCOCl and R_2Cd?

Watch Video Solution

240. What are acetals ? Give one method of their preparation.

Watch Video Solution

241. Describe two nucleophilic addition reactions of carbonyl compounds.

Watch Video Solution

242. Why do aldehydes and ketones undergo a number of addition reactions ?

Watch Video Solution

243. The order of reactivity of carbonyl compounds for nucleophilic addition is

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244. Arange the following in increasing order of reactivity towards nucleophilic addition:

$HCHO, CH_3CHO, CH_3COCH_3$

Watch Video Solution

245. How is benzaldehyde prepared from:

Toluene

Watch Video Solution

246. How is benzaldehyde prepared from:

Benzoic acid

Watch Video Solution

247. How are the following conversions carried out ?

Acetophenone from benzene

Watch Video Solution

248. How are the following conversions carried out ?

Benzaldehyde from toluene

Watch Video Solution

249. What products are formed when acetic acid is reacted separately with phosphorus trichloride and chlorine in presence of phosphorus as catalyst ?

Watch Video Solution

250. How is benzoic acid prepared from Friedel-Craft's reaction?

Watch Video Solution

251. State giving reasons what products are likely to be formed in the bromination of benzoic acid.

Watch Video Solution

252. What happens when sodium benzoate is heated with soda lime?

Watch Video Solution

253. Lactic acid, $CH_3CHOH.COOH$ exists in two optically active forms. Explain.

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254. Which of the following compounds will be obtained on treatment of propanal with dilute NaOH solution and why ?

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CH(OH)CH(CH_3)CHO$

C. $CH_3CH_2CH(OH)CH_2CH_2CHO$

D. $CH_3CH_2COCH_2CHO$

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255. Which one of the following two compounds will give Haloform reaction and why ?

$CH_3CHO, HCHO$

Watch Video Solution

256. Identify A and B :

$$CH_3MgBr \xrightarrow[(ii)\ H_2O]{(i)\ \text{dry ice}} A \xrightarrow[\text{Heat}]{\text{Soda lime}} B$$

Watch Video Solution

257. Why is acetic acid more acidic than ethanol?

Watch Video Solution

258. How will you convert benzoyl chloride to benzaldehyde?

Watch Video Solution

259. Give one chemical test to distinguish between acetaldehyde and acetone.

Watch Video Solution

260. How can the following conversions be carried out ?

Ethanal to Acetone

Watch Video Solution

261. How can the following conversions be carried out ?

Benzene to Acetophenone

Watch Video Solution

262. How can the following conversions be carried out ?

Benzoic acid to Benzaldehyde

Watch Video Solution

263. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Acetaldehyde to ethyl alcohol

Watch Video Solution

264. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Acetaldehyde to isopropyl alcohol

Watch Video Solution

265. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Formaldehyde to methylal.

Watch Video Solution

266. Write the formulae of the products that will be formed when propanal reacts with:

sodium bisulfite

Watch Video Solution

267. Write the formulae of the products that will be formed when propanal reacts with:

methyl magnesium bromide

Watch Video Solution

268. Write the formulae of the products that will be formed when propanal reacts with:

hydrogen in the presence of nickel catalyst.

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269. Predict the formulae of the products of the following reactions:

$CH_3CH_2CHO + Cl_2 \rightarrow$

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270. Predict the formulae of the products of the following reactions:

$CH_3COCH_3 + HCN \rightarrow$

Watch Video Solution

271. Predict the formulae of the products of the following reactions:

$C_6H_5COCH_3 + NH_2OH \rightarrow$

Watch Video Solution

272. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Formaldehyde

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273. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Acetaldehyde

Watch Video Solution

274. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Acetone.

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275. How does acetaldehyde react with:

$NaHSO_3$

Watch Video Solution

276. How does acetaldehyde react with:

HCN

Watch Video Solution

277. How does acetaldehyde react with:

C_2H_5MgBr

Watch Video Solution

278. Write chemical equations for reaction of acetaldehyde with

Ammoniacal $AgNO_3$

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279. How does acetaldehyde react with:

NH_2OH

Watch Video Solution

280. Write chemical equations for reaction of acetaldehyde with

HCN

Watch Video Solution

281. How will you account for the following:

Formaldehyde gives Cannizzaro's reaction but acetaldehyde does not.

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282. How will you account for the following:

During preparation of ammonia derivatives from aldehydes and ketones, pH of the reaction is carefully controlled.

Watch Video Solution

283. How will you account for the following:

To illustrate cross aldol condensation, write one chemical equation.

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284. Complete the following equations giving the names of the reactants and the products :

$(CH_3COO)_2Ca \xrightarrow{\Delta}$

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285. Complete the following equations giving the names of the reactants and the products :

$C_6H_5CHCl_2 + NaOH(aq) \xrightarrow{\text{Heat}}$

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286. Complete the following equations giving the names of the reactants and the products :

$2HCHO + NaOH \rightarrow$

Watch Video Solution

287. Complete the following equations giving the names of the reactants and the products :

$CH_3COCl + H_2 \xrightarrow{Pd / BaSO_4}$

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288. You are provided with four reagents:

$LiAlH_4$, $I_2 / NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

CH_3CHO and CH_3COCH_3

Watch Video Solution

289. You are provided with four reagents:

$LiAlH_4$, $I_2 / NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the

compounds in each of the following pairs:

CH_3CHO and C_6H_5CHO

Watch Video Solution

290. You are provided with four reagents:

$LiAlH_4$, $I_2/NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

$C_6H_5COCH_3$ and $C_6H_5COC_6H_5$

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291. How will you obtain formic acid from the following:

Carbon monoxide

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292. How will you obtain formic acid from the following:

Oxalic acid

Watch Video Solution

293. How will you obtain formic acid from the following:

Formaldehyde.

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294. Give three examples to illustrate reducing nature of formic acid.

Watch Video Solution

295. How are the following conversions carried out ?

Acetic acid from acetylene

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296. How are the following conversions carried out ?

Butanoic acid from butan-1-ol

Watch Video Solution

297. How are the following conversions carried out ?

Acetic acid from ethyl alcohol

Watch Video Solution

298. How is acetic acid prepared from Methyl iodide ?

Watch Video Solution

299. How is acetic acid prepared from Acetonitrile?

Watch Video Solution

300. Starting from methylmagnesium bromide, how will you synthesise acetic acid?

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301. How will you convert:

Ethyl chloride to propanoic acid ?

Watch Video Solution

302. Conversion of Bromobenzene to benzoic acid

Watch Video Solution

303. Give equations for the reaction of acetic acid with

PCl_5

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304. Give equations for the reaction of acetic acid with

$SOCl_2$

Watch Video Solution

305. Write the chemical equations, when:

Acetic acid reacts with $LiAlH_4$

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306. How will you obtain the following from the acetic acid?

Ethyl acetate

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307. How will you obtain the following from the acetic acid?

Acetaldehyde

Watch Video Solution

308. How will you obtain the following from the acetic acid?

Acetamide

Watch Video Solution

309. How will you obtain the following from the acetic acid?

Acetic anhydride ?

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310. Write the chemical reactions of acetic acid with

Zn metal

Watch Video Solution

311. Write the chemical reactions of acetic acid with

Na metal

Watch Video Solution

312. Write the chemical reactions of acetic acid with

$NaHCO_3$

Watch Video Solution

313. Write the chemical reactions of acetic acid with

HI / P_4 at 473K

Watch Video Solution

314. When potassium acetate is electrolysed, we get

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315. What happens when:

Sodium acetate is distilled with soda lime

Watch Video Solution

316. What happens when:

Silver acetate is'refluxed with bromine in presence of CCl_4

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317. What is the reaction when ammonium acetate is refluxed with the glacial acetic acid?

Watch Video Solution

318. Write the balanced chemical equation for the reaction of sodium hydroxide with acetic acid

Watch Video Solution

319. An organic compound contains carbon 40%, oxygen 53.3 and hydrogen 6.7%. f the vapour density of the compound is 30, what is its molecular formula ? Write the probable structures and name of the conmpound.

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320. How will you distinguish between the following pairs? Givo one chemical test for each pair.

Acetic acid and ethyl alcohol

Watch Video Solution

321. Give one chemical test to distinguish between the following pairs of compound:

Formic acid and acetic acid.

Watch Video Solution

322. Give at least two tests to distinguish between phenol an benzoic acid.

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323. Give reasons for the following:

The bond length of C =O bond in carboxylic acids is slightly larger than that in aldehydes and ketones. Why?

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324. Complete the following equations:

$C_6H_5COOH + Na_2CO_3(aq) \rightarrow$

Watch Video Solution

325. Complete the following equations:

$C_6H_5COOH + SOCl_2 \rightarrow$

Watch Video Solution

326. Complete the following equations:

$H_3CO\overline{O} + H_2O \xrightarrow{\text{electrolysis}}$

Watch Video Solution

327. Compare the acid strengths of the following:

Formic acid

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328. Compare the acid strengths of the following:

Acetic acid

Watch Video Solution

329. Compare the acid strengths of the following:

Benzoic acid.

Watch Video Solution

330. Giving an appropriate example, explain how the presence of a substituent on aliphatic chain of a carboxylic acid effects its acid strength.

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331. How can ethanoic acid converted into propanoic acid and vice versa?

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332. How will you explain that formic acid is stronger than acetic acid?

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333. Chloroacetic acid has lower pK_a value than acetic acid.

Watch Video Solution

334. Carboxylic acids have higher boiling points than alcohols Why?

Watch Video Solution

335. Electrophilic substitution in benzoic acid takes place at meta position.

Watch Video Solution

336. Write short notes on :

Decarboxylation of acids

Watch Video Solution

337. Explain why carboxylic acids are stronger acids than phenols.

Watch Video Solution

338. Give a brief account of HVZ reaction.

Watch Video Solution

339. How will you get acetone from acetic acid?

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340. Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of comparable molecular mass. It is due to their

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341. Arrange the following compounds in increasing order of their acid strength.

$CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH, (CH_3)_2CHCOOH,$

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342. (a) Give chemical tests to distinguish between the following pairs of compounds:

(i) Ethanal and Propanone.

(ii) Pentan-2-one and Pentan-3-one.

(b) Arrange the following compounds in increasing order of their acid

strength: Benzoic acid, 4- Nitrobenzoic acid, 3,4-Dinitrobenzoic acid,

4- Methoxybenzoic acid.

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343. What is Tollens' reagent ? How can acetaldehyde and acetone be distinguished with its help?

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344. Which one between HCHO and CH_3CHO does not contain α-H atom ? What happens when the compound which contains α-H atom reacts with dilute NaOH ?

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345. Write short notes on the following:

Aldol condensation

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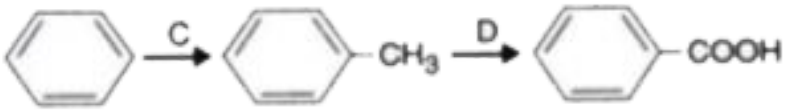
346. Write short notes on the following:

Rosenmund reduction

Watch Video Solution

347. Identify the reagents with conditions in the following reactions (C-F):



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348. Identify the reagents with conditions in the following reactions (C-F):

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349. What is Brady's reagent ? Write down one if its uses.

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350. Name one organic compound which is acidic as well as reducing agent. Give one example each of the properties.

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351. Write the product when acetone is heated with barium hydroxide.

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352. Identify A and B:

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353. Which organic compound is fomed when toluene is reacted with CrO_2Cl_2 in CCl_4 medium and the product is decomposed with water ? What happens when the organic compound which is formed is heated with HCHO and 50% NaOH solution?

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354. How will you bring about the following conversions :

Ethanol to 3-hydroxybutanal

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355. How will you bring about the following conversions :

Benzaldehyde to benzophenone?

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356. Give the IUPAC names of the following:

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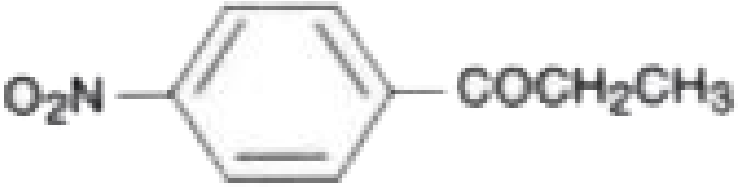
357. Give the IUPAC names of the following:



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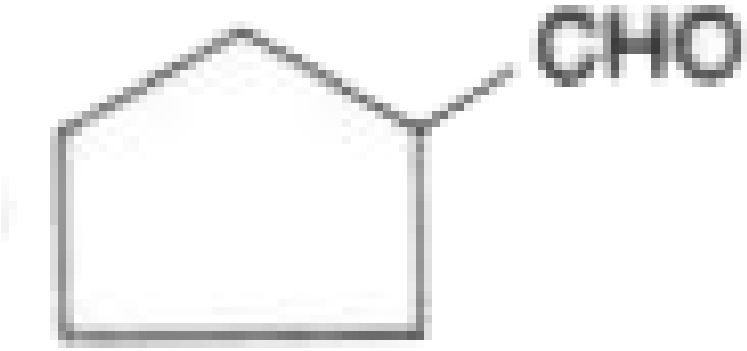
358. Give the IUPAC names of the following:



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359. Give one example of each of the following reactions:

Bouveault-Blanc reduction

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360. Give Examples of the following:

Clemmenson reduction

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361. Give Examples of the following:

Saponification reaction

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362. Give Examples of the following:

Crossed-Cannizzaro reaction

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363. Convert:

$CH_3COOH \rightarrow CH_3COCl$

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364. Convert:

$CH_3CH_2COOH \rightarrow CH_3CH_2Br$

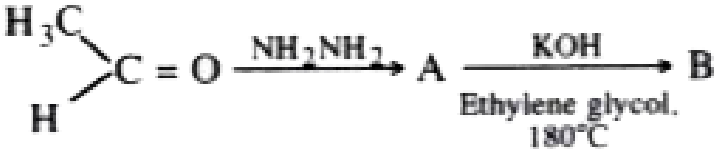
Watch Video Solution

365. Convert:

$RCN \rightarrow RCHO$

Watch Video Solution

366. Identify A, B in the following reactions:



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367. What happens when formic acid is heated with conc. H_2SO_4?

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368. Illustrate the following reactions giving suitable example in each case :

(i) Clemmensen reduction

(ii) Hell-Volhard-Zelinsky reaction.

(b) How are the following conversions carried out ?

(i) Ethylcyanide to ethanoic acid

(ii) Butanol to Butanoic acid

(iii) Benzoic acid to m-bromobenzoic acid

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369. Illustrate the following reactions giving suitable example in each case :

(i) Clemmensen reduction

(ii) Hell-Volhard-Zelinsky reaction.

(b) How are the following conversions carried out ?

(i) Ethylcyanide to ethanoic acid

(ii) Butanol to Butanoic acid

(iii) Benzoic acid to m-bromobenzoic acid

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370. (a) Arrange the following in an increasing order of their indicated property.

(i) Benzoic acid ,4- Nitrobenzoc acid ,3,4 - Dinitrobenzoic acid, 4-Methoxybenzoic acid (acid strength)

(ii) $CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH,$

$(CH_3)_2CHCOOH, CH_3CH_2CH_2COOH$ (acid strength)

(b) How would you bring about the following conversions :

(i) Propanone to propene

(ii) Benzoic acid to Benzaldehyde

(iii) Bromobenzene to 1- phenylethanol

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371. Arrange the following compounds in increasing order of their acid strengths:

$(CH_3)_2CHCOOH, CH_3CH_2CH(Br)COOH,$

$CH_3CH(Br)CH_2COOH$

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372. Explain the mechanism of the following reactions :

(i) Addition of Grignard reagent to a carbonyl compound forming an adduct followed by hydrolysis.

(ii) Acid catalysed dehydration of alcohol forming an alkene.

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373. Draw the structure of the following compounds:

(i) 3-Methylbutanal (i) p-nitropropiophenone

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374. Write chemical equations to illustrate the following name bearing reactions: (i) Cannizzaro 's reaction

(ii) Hell - Volhard -Zelinsky reaction

Watch Video Solution

375. How would you bring about the following conversions? Write the complete equations in each case.

(i) Ethanal to 3-hydroxybutanal

(ii) Benzaldehyde to benzophenone

Watch Video Solution

376. Write the structures of the main products of the following reactions :

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377. Write the structures of the main products of the following reactions :

$H_3C - C \equiv C - H \xrightarrow{Hg^{2+}, H_2SO_4}$

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378. Give one example of each of the following reactions:

Esterification reaction

Watch Video Solution

379. Give one example of each of the following reactions:

Bouveault-Blanc reduction

Watch Video Solution

380. Show the arrowhead steps for the preparation of acetic acid by using the following substances in the correct order: dry $C_2H_5OC_2H_5$, I_2, Mg, $\text{red}P$, CH_3OH, CO_2, dilute HCl.

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381. What are Fehling's solution A and Fehling's solution B? What visual change is observed when they are mixed in equal proportions ? Give one example of the use of the mixture.

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382. Write the products of the following reactions:

$$CH_3COCH_3 \xrightarrow[\text{conc. HCl}]{Zn-Hg}$$

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383. Write the products of the following reactions:

$$CH_3COCH_3 \xrightarrow[(b)\,\text{dil.acid}]{(a)\,Mg-Hg,\,\text{dry ether}} ?$$

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384. Write the products of the following reactions:

$$CH_3CO_2H \xrightarrow[(b)\,H_2O]{(a)\,Br_2,\,\text{red P}}$$

Watch Video Solution

385. Write the products of the following reactions:

$$CH_3CHO \xrightarrow{HCN} ?$$

Watch Video Solution

386. Write the products of the following reactions:

$$(HCOO)_2Ca \xrightarrow{\text{dry distillation}} ?$$ (Organic Compound)

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387. In what respects, the C=C and C =O bonds resemble and differ from each other?

Watch Video Solution

388. Name the products obtained by:

heating calcium formate

Watch Video Solution

389. Name the products obtained by:

heating mixture of calcium formate and calcium acetate.

Watch Video Solution

390. How will you convert acetyl chloride to

acetaldehyde

Watch Video Solution

391. How will you convert acetyl chloride to

acetone?

Watch Video Solution

392. Write one chemical equation for each, to illustrate the following reactions:

Rosenmund reduction

Watch Video Solution

393. Write one chemical equation for each, to illustrate the following reactions:

Cannizzaro reaction.

Watch Video Solution

394. Give chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone.

Watch Video Solution

395. Give chemical tests to distinguish between the following pairs of compounds :

Benzaldehyde and benzoic acid.

Watch Video Solution

396. State reasons for the following situations :

Monochloroethanoic acid is a weaker acid than dichloroethanoic acid.

Watch Video Solution

397. State reasons for the following situations :

Benzoic acid is a stronger acid than ethanoic acid.

Watch Video Solution

398. Write chemical tests to distinguish between the following pairs of compounds :

Acetophenone and benzophenone.

Watch Video Solution

399. Write chemical tests to distinguish between the following pairs of compounds :

Ethanal and propanal.

Watch Video Solution

400. State chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone

Watch Video Solution

401. State chemical tests to distinguish between the following pairs of compounds :

Phenol and benzoic acid.

Watch Video Solution

402. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

403. Give chemical tests to distinguish between:

Propanone and propanal

Watch Video Solution

404. How will you bring about the following conversions :

Ethanol to 3-hydroxybutanal

Watch Video Solution

405. How will you bring about the following conversions :

Benzaldehyde to benzophenone?

Watch Video Solution

406. Illustrate the following name reactions by giving example:

Cannizzaro's reaction

Watch Video Solution

407. Illustrate the following name reactions by giving example:

Clemmensen reduction

Watch Video Solution

408. Give reasons for the following:

Treatment of benzaldehyde with HCN gives a mixture of two isomers which cannot be separated even by careful fractional distillation.

Watch Video Solution

409. Give reasons for the following:

Sodium bisulfite is used for the purification of aldehydes and ketones.

Watch Video Solution

410. Write the steps and conditions involved in the following conversions:

acetophenone to 2-phenyl-2-butanol.

Watch Video Solution

411. Write the steps and conditions involved in the following conversions:

Propyne to acetone.

Watch Video Solution

412. How would you bring about the following conversions:

Propanal to butanone

Watch Video Solution

413. How would you bring about the following conversions:

Benzaldehyde to benzophenone

Watch Video Solution

414. Write the structural formulae of the following :

Pinacol

Watch Video Solution

415. Write the structural formulae of the following :

Pinacolone(t-butyl methyl ketone)

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416. Write the structural formulae of the following :

Di-isopropyl ketone

Watch Video Solution

417. Write the structural formulae of the following :

Methyl vinyl Ketone

Watch Video Solution

418. Dipole moments of aldehydes and ketones are higher than the alcohols. Why?

Watch Video Solution

419. Write the chemical equation when acetone reacts with ethanol.

Watch Video Solution

420. Ethanal is more reactive towards nucleophilic addition reaction than propanone. Why ?

Watch Video Solution

421. Benzaldehyde is less reactive than acetaldehyde towards nucleophilic addition reactions. Justify.

Watch Video Solution

422. How amines are prepared from aldehydes?

Watch Video Solution

423. Explain the following reactions :

Cannizzaro reaction

Watch Video Solution

424. Explain the following reactions :

Aldol condensation

Watch Video Solution

425. Why do aldehydes and ketones undergo nucleophilic addition reactions. Give one example.

Watch Video Solution

426. How will you convert formaldehyde to acetaldehyde ?

Watch Video Solution

427. How aldehydes and ketones are distinguished ? Give two chemical reactions.

Watch Video Solution

428. Name the reagents that can oxidise unsaturated aldehydes to unsaturated carboxylic acids.

Watch Video Solution

429. How will you carry out the following conversions :

Acetone to ter-butyl alcohol

Watch Video Solution

430. How will you carry out the following conversions :

Acetaldehyde to lactic acid.

Watch Video Solution

431. What is active alpha hydrogen atom ? Name one reaction that takes place due to the presence of such a hydrogen.

Watch Video Solution

432. Why can't ketones be prepared from $R-\overset{O}{\overset{||}{C}}-Cl$ and Grignard reagent, RMgCl, altough they can be prepared from RCOCl and R_2Cd?

Watch Video Solution

433. What are acetals ? Give one method of their preparation.

Watch Video Solution

434. Describe two nucleophilic addition reactions of carbonyl compounds.

Watch Video Solution

435. Why do aldehydes and ketones undergo a number of addition reactions ?

Watch Video Solution

436. Discuss the relative reactivities of carbonyl compounds in nucleophilic addition reactions.

Watch Video Solution

437. Arange the following in increasing order of reactivity towards nucleophilic addition:

$HCHO, CH_3CHO, CH_3COCH_3$

Watch Video Solution

438. How is benzaldehyde prepared from:

Toluene

Watch Video Solution

439. How is benzaldehyde prepared from:

Benzoic acid

Watch Video Solution

440. How are the following conversions carried out ?

Acetophenone from benzene

Watch Video Solution

441. How are the following conversions carried out ?

Benzaldehyde from toluene

Watch Video Solution

442. What products are formed when acetic acid is reacted separately with phosphorus trichloride and chlorine in presence of phosphorus as catalyst ?

Watch Video Solution

443. How is beenzaldehyde prepared from Friedel-Craft's reaction?

Watch Video Solution

444. State giving reasons what products are likely to be formed in the bromination of benzoic acid.

Watch Video Solution

445. What happens when sodium benzoate is heated with soda lime?

Watch Video Solution

446. Lactic acid, $CH_3CHOH.COOH$ exists in two optically active forms. Explain.

Watch Video Solution

447. Which of the following compounds will be obtained on treatment of propanal with dilute NaOH solution and why ?

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CH(OH)CH(CH_3)CHO$

C. $CH_3CH_2CH(OH)CH_2CH_2CHO$

D. $CH_3CH_2COCH_2CHO$

Watch Video Solution

448. Which one of the following two compounds will give Haloform reaction and why ?

$CH_3CHO, HCHO$

Watch Video Solution

449. Identify A and B :

$$CH_3MgBr \xrightarrow[(ii)\ H_2O]{(i)\ \text{dry ice}} A \xrightarrow[\text{Heat}]{\text{Soda lime}} B$$

Watch Video Solution

450. Why is acetic acid more acidic than ethanol?

Watch Video Solution

451. Fill in the reagents for the given conversion :

$$CH_3COCl \xrightarrow{(X)} CH_3CHO \xrightarrow{(Y)} CH_3 - \overset{\overset{OH}{|}}{C}H - CH_2CHO \xrightarrow{(Z)} CH_3CH =$$

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452. How will you convert benzoyl chloride to benzaldehyde?

Watch Video Solution

453. Give one chemical test to distinguish between acetaldehyde and acetone.

Watch Video Solution

454. How can the following conversions be carried out ?

Ethanal to Acetone

Watch Video Solution

455. How can the following conversions be carried out ?

Benzene to Acetophenone

Watch Video Solution

456. How can the following conversions be carried out ?

Benzoic acid to Benzaldehyde

Watch Video Solution

457. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Acetaldehyde to isopropyl alcohol

Watch Video Solution

458. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Acetaldehyde to isopropyl alcohol

Watch Video Solution

459. Indicate a method by which each of the following conversions may be affected. Give one balanced equation for the reaction you choose in each case.

Formaldehyde to methylal.

Watch Video Solution

460. Write the formulae of the products that will be formed when propanal reacts with:

sodium bisulfite

Watch Video Solution

461. Write the formulae of the products that will be formed when propanal reacts with:

methyl magnesium bromide

Watch Video Solution

462. Write the formulae of the products that will be formed when propanal reacts with:

hydrogen in the presence of nickel catalyst.

Watch Video Solution

463. Predict the formulae of the products of the following reactions:

$CH_3CH_2CHO + Cl_2 \rightarrow$

Watch Video Solution

464. Predict the formulae of the products of the following reactions:

$CH_3COCH_3 + HCN \rightarrow$

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465. Predict the formulae of the products of the following reactions:

$C_6H_5COCH_3 + NH_2OH \rightarrow$

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466. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Formaldehyde

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467. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Acetaldehyde

Watch Video Solution

468. What is Grignard reagent ? What are the products formed when Grignard reagent reacts with :

Acetone.

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469. How does acetaldehyde react with:

$NaHSO_3$

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470. How does acetaldehyde react with:

HCN

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471. How does acetaldehyde react with:

C_2H_5MgBr

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472. Write chemical equations for reaction of acetaldehyde with

Ammoniacal $AgNO_3$

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473. Write chemical equations for reaction of acetaldehyde with

NH_2OH

Watch Video Solution

474. Write chemical equations for reaction of acetaldehyde with

HCN

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475. How will you account for the following:

Formaldehyde gives Cannizzaro's reaction but acetaldehyde does not.

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476. How will you account for the following:

During preparation of ammonia derivatives from aldehydes and ketones, pH of the reaction is carefully controlled.

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477. Give a brief account of the following reaction:

Cross-Aldol condensation

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478. Complete the following equations giving the names of the reactants and the products :

$(CH_3COO)_2Ca \xrightarrow{\Delta}$

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479. Complete the following equations giving the names of the reactants and the products :

$C_6H_5CHCl_2 + NaOH(aq) \xrightarrow{\text{Heat}}$

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480. Complete the following equations giving the names of the reactants and the products :

$2HCHO + NaOH \rightarrow$

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481. Complete the following equations giving the names of the reactants and the products :

$CH_3COCl + H_2 \xrightarrow{Pd / BaSO_4}$

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482. You are provided with four reagents:

$LiAlH_4$, $I_2 / NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

CH_3CHO and CH_3COCH_3

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Watch Video Solution

483. You are provided with four reagents:

$LiAlH_4$, $I_2/NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

CH_3CHO and C_6H_5CHO

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484. You are provided with four reagents:

$LiAlH_4$, $I_2/NaOH$, $NaHSO_3$ and Schiff's reagent.

Write which two reagents can be used to distinguish between the compounds in each of the following pairs:

$C_6H_5COCH_3$ and $C_6H_5COC_6H_5$

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485. How will you obtain formic acid from the following:

Carbon monoxide

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486. How will you obtain formic acid from the following:

Oxalic acid

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487. How will you obtain formic acid from the following:

Formaldehyde.

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488. Give three examples to illustrate reducing nature of formic acid.

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489. How are the following conversions carried out ?

Acetic acid from acetylene

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490. How are the following conversions carried out ?

Butanoic acid from butan-1-ol

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491. How are the following conversions carried out ?

Acetic acid from ethyl alcohol

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492. How is acetic acid prepared from Methyl iodide ?

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493. How is acetic acid prepared from Acetonitrile?

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494. Starting from methylmagnesium bromide, how will you synthesise acetic acid?

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495. How will you convert:

Ethyl chloride to propanoic acid ?

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496. Conversion of Bromobenzene to benzoic acid

Watch Video Solution

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497. Give equations for the reaction of acetic acid with potassium hydroxide

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498. Give equations for the reaction of acetic acid with

$SOCl_2$

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499. Give equations for the reaction of formic acid with sodium hydroxide

Watch Video Solution

500. How will you obtain the following from the acetic acid?

Ethyl acetate

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501. How will you obtain the following from the acetic acid?

Acetaldehyde

Watch Video Solution

502. How will you obtain the following from the acetic acid?

Acetamide

Watch Video Solution

503. How will you obtain the following from the acetic acid?

Acetic anhydride ?

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504. Write the chemical reactions of acetic acid with

Zn metal

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505. Write the chemical reactions of acetic acid with

Na metal

Watch Video Solution

506. Write the chemical reactions of acetic acid with

$NaHCO_3$

Watch Video Solution

507. Write the chemical reactions of acetic acid with

HI / P_4 at 473K

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508. When potassium acetate is electrolysed, we get

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509. What happens when:

Sodium acetate is distilled with soda lime

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510. What happens when:

Silver acetate is'refluxed with bromine in presence of CCl_4

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511. What is the reaction when ammonium acetate is refluxed with the glacial acetic acid?

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512. Write the balanced chemical equation for the reaction of potassium hydroxide and formic acid

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513. An organic compound contains carbon 40%, oxygen 53.3 and hydrogen 6.7%. f the vapour density of the compound is 30, what is its molecular formula ? Write the probable structures and name of the conmpound.

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514. How will you distinguish between the following pairs? Givo one chemical test for each pair.

Acetic acid and ethyl alcohol

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515. Give one chemical test to distinguish between the following pairs of compound:

Formic acid and acetic acid.

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516. Give at least two tests to distinguish between phenol an benzoic acid.

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517. Give reasons for the following:

The bond length of C =O bond in carboxylic acids is slightly larger than that in aldehydes and ketones. Why?

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518. Complete the following equations:

$C_6H_5COOH + Na_2CO_3(aq) \rightarrow$

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519. Complete the following equations:

$C_6H_5COOH + SOCl_2 \rightarrow$

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520. Complete the following equations:

$H_3CO\overline{O} + H_2O \xrightarrow{\text{electrolysis}}$

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521. Compare the acid strengths of the following:

Formic acid

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522. Compare the acid strengths of the following:

Acetic acid

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523. Compare the acid strengths of the following:

Benzoic acid.

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524. Giving an appropriate example, explain how the presence of a substituent on aliphatic chain of a carboxylic acid effects its acid strength.

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525. How can ethanoic acid converted into propanoic acid and vice versa?

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526. How will you explain that formic acid is stronger than acetic acid?

Watch Video Solution

527. Chloroacetic acid has lower pK_a value than acetic acid.

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528. Carboxylic acids have higher boiling points than alcohols Why?

Watch Video Solution

529. Electrophilic substitution in benzoic acid takes place at meta position.

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530. Write short notes on :

Decarboxylation of acids

Watch Video Solution

531. Explain why carboxylic acids are stronger acids than phenols.

Watch Video Solution

Watch Video Solution

532. Give a brief account of HVZ reaction.

Watch Video Solution

533. How will you get acetone from acetic acid?

Watch Video Solution

534. Carboxylic acids have higher boiling points than alcohols Why?

Watch Video Solution

535. Arrange the following compounds in increasing order of their acid strength.

$CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH, (CH_3)_2CHCOOH,$

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536. (a) Give chemical tests to distinguish between the following pairs of compounds:

(i) Ethanal and Propanone.

(ii) Pentan-2-one and Pentan-3-one.

(b) Arrange the following compounds in increasing order of their acid strength: Benzoic acid, 4- Nitrobenzoic acid, 3,4-Dinitrobenzoic acid, 4- Methoxybenzoic acid.

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537. What is Tollens' reagent ? How can acetaldehyde and acetone be distinguished with its help?

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538. Which one between HCHO and CH_3CHO does not contain α-H atom ? What happens when the compound which contains α-H atom reacts with dilute NaOH ?

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539. Write short notes on the following:

Aldol condensation

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540. Write short notes on the following:

Rosenmund reduction

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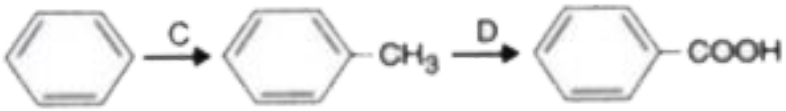
541. Identify the reagents with conditions in the following reactions (C-F):



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542. Identify the reagents with conditions in the following reactions (C-F):

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543. What is Brady's reagent ? Write down one if its uses.

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544. Name one organic compound which is acidic as well as reducing agent. Give one example each of the properties.

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545. Write the product when acetone is heated with barium hydroxide.

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546. Identify A and B:

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547. Which organic compound is fomed when toluene is reacted with CrO_2Cl_2 in CCl_4 medium and the product is decomposed with water ?

What happens when the organic compound which is formed is heated with HCHO and 50% NaOH solution?

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548. How will you bring about the following conversions :

Ethanol to 3-hydroxybutanal

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549. How will you bring about the following conversions :

Benzaldehyde to benzophenone?

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550. Give the IUPAC names of the following:

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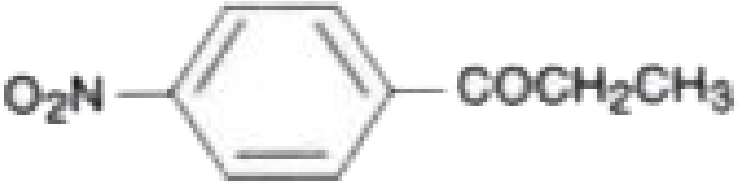
551. Give the IUPAC names of the following:



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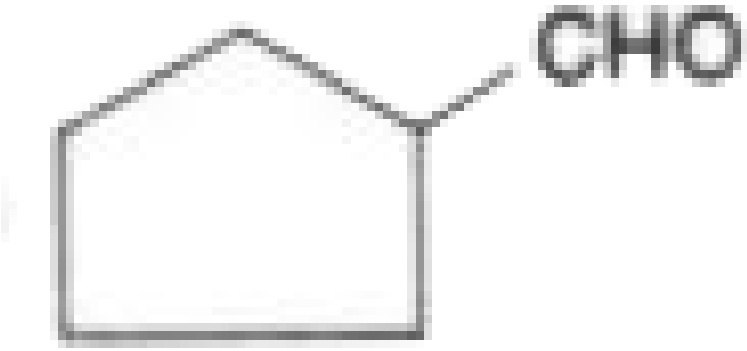
552. Give the IUPAC names of the following:



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553. Give one example of each of the following reactions:

Bouveault-Blanc reduction

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554. Give Examples of the following:

Clemmenson reduction

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555. Give Examples of the following:

Saponification reaction

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556. Give Examples of the following:

Crossed-Cannizzaro reaction

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557. Convert:

$CH_3COOH \rightarrow CH_3COCl$

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558. Convert:

$CH_3CH_2COOH \rightarrow CH_3CH_2Br$

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559. Convert:

$RCN \rightarrow RCHO$

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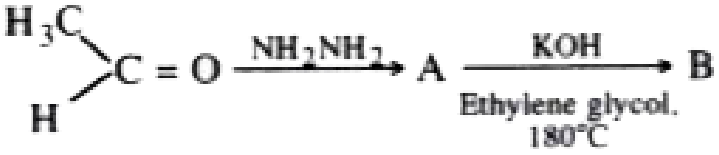
560. Identify A, B in the following reactions:



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561. What happens when formic acid is heated with conc. H_2SO_4?

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562. Illustrate the following name reactions by giving example:

Clemmensen reduction

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563. Illustrate the following reactions giving suitable example in each case :

(i) Clemmensen reduction

(ii) Hell-Volhard-Zelinsky reaction.

(b) How are the following conversions carried out ?

(i) Ethylcyanide to ethanoic acid

(ii) Butanol to Butanoic acid

(iii) Benzoic acid to m-bromobenzoic acid

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564. (a) Arrange the following in an increasing order of their indicated property.

(i) Benzoic acid ,4- Nitrobenzoc acid ,3,4 - Dinitrobenzoic acid, 4-Methoxybenzoic acid (acid strength)

(ii) $CH_3CH_2CH(Br)COOH, CH_3CH(Br)CH_2COOH,$

$(CH_3)_2CHCOOH, CH_3CH_2CH_2COOH$ (acid strength)

(b) How would you bring about the following conversions :

(i) Propanone to propene

(ii) Benzoic acid to Benzaldehyde

(iii) Bromobenzene to 1- phenylethanol

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565. Arrange the following compounds in increasing order of their acid strengths:

$(CH_3)_2CHCOOH, CH_3CH_2CH(Br)COOH,$

$CH_3CH(Br)CH_2COOH$

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566. Write the mechanism of the addition of Grignard reagent to the carbonyl group of a compound to form an adduct which on hydrolysis yield an alcohol.

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567. Draw the structure of the following compounds:

(i) 3-Methylbutanal (i) p-nitropropiophenone

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568. Write chemical equations to illustrate the following name bearing reactions: (i) Cannizzaro 's reaction

(ii) Hell - Volhard -Zelinsky reaction

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569. How would you bring about the following conversions? Write the complete equations in each case.

(i) Ethanal to 3-hydroxybutanal

(ii) Benzaldehyde to benzophenone

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570. Write the structures of the main products of the following reactions :

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571. Write the structures of the main products of the following reactions :

$$H_3C - C \equiv C - H \xrightarrow{Hg^{2+}, H_2SO_4}$$

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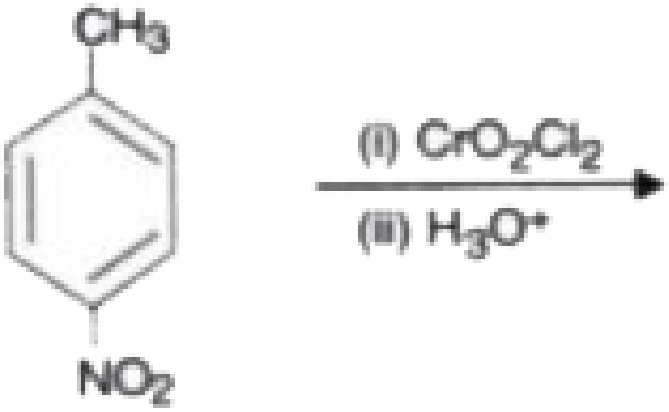
572. Write the structures of the main products of the following reactions

:



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573. Give one example of each of the following reactions:

Esterification reaction

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574. Give one example of each of the following reactions:

Bouveault-Blanc reduction

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575. Show the arrowhead steps for the preparation of acetic acid by using the following substances in the correct order: dry $C_2H_5OC_2H_5$, I_2, Mg, red$P$, CH_3OH, CO_2, dilute HCl.

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576. What are Fehling's solution A and Fehling's solution B? What visual change is observed when they are mixed in equal proportions ? Give one example of the use of the mixture.

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577. Write the products of the following reactions:

$$CH_3COCH_3 \xrightarrow[\text{conc. HCl}]{Zn-Hg}$$

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578. Write the products of the following reactions:

$$CH_3COCH_3 \xrightarrow[(b)\,\text{dil.acid}]{(a)\,Mg-Hg\,,\text{dry ether}} ?$$

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579. Write the products of the following reactions:

$$CH_3CO_2H \xrightarrow[(b)\,H_2O]{(a)\,Br_2\,,\text{red P}}$$

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580. Write the products of the following reactions:

$$CH_3CHO \xrightarrow{HCN} ?$$

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581. Write the products of the following reactions:

$(HCOO)_2Ca \xrightarrow{\text{dry distillation}} ?$ (Organic Compound)

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EXERCISE (PART-II DESCRIPTIVE QUESTIONS) (LONG ANSWER QUESTIONS)

1. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH(CH_3)CH_2CH_2 - CHO$

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2. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH_2COCH(C_2H_5)CH_2CH_2Cl$

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3. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH = CHCHO$

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4. Name the following compounds according to IUPAC system of nomenclature

$CH_3COCH_2COCH_3$

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5. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH(CH_3)CH_2C(CH_3)_2COCH_3$

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6. Name the following compounds according to IUPAC system of nomenclature

$(CH_3)_3CCH_2COOH$

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7. Name the following compounds according to IUPAC system of nomenclature

$OHCC_6H_4CHO - p$

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8. Draw the structures of the following compounds:

3-Methylbutanal

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9. Draw the structures of the following compounds:

p-Nitropropiophenone

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10. Draw the structures of the following compounds:

p-methylbenzaldehyde

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11. Draw the structures of the following compounds:

4-Methylpent-3-ene-2-one

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12. Draw the structures of the following compounds:

4-Chloropentan-2-one

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13. Draw the structures of the following compounds:

3-Bromo-4-phenylpentanoic acid

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14. Draw the structures of the following compounds:

p, p-Dihydroxybenzophenone

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15. Draw the structures of the following compounds:

Hex-2-en-4-ynoic acid.

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16. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$CH_3CO(CH_2)_4CH_3$

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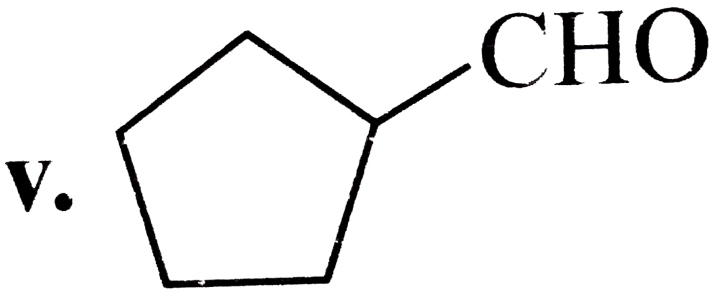
17. Write the IUPAC names of following ketones and aldehydes. Wherever possible, give common nemes also.

i. $CH_3CO(CH_2)_4CH_3$

ii. $CH_3CH_2CHBrCH_2CH(CH_3)CHO$

iii. $CH_3(CH_2)_5CHO$

iv. $Ph - CH = CH - CHO$

v. 

v.

vi. $PhCOPh$

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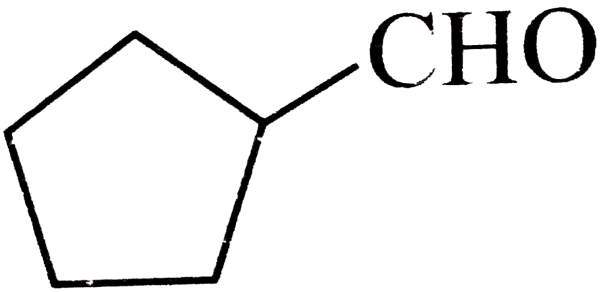
18. Write the IUPAC names of following ketones and aldehydes. Wherever possible, give common nemes also.

i. $CH_3CO(CH_2)_4CH_3$

ii. $CH_3CH_2CHBrCH_2CH(CH_3)CHO$

iii. $CH_3(CH_2)_5CHO$

iv. $Ph - CH = CH - CHO$

v. 

v.

vi. $PhCOPh$

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19. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$Ph - CH = CH - CHO$

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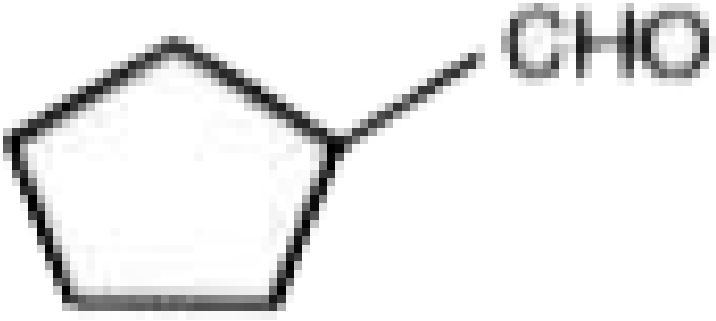
20. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.



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21. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$PhCOPh$

Watch Video Solution

22. Draw the structure of following derivatives:

i. 2,4-Dinitrophylhydrazone of benzaldehyde.

ii. Cyclopropanone oxime

iii. Actaldehyde dimethyl acetal

iv. Semicarbazone of cyclobutanone

v. Ethylene ketal of hexan-3-one

vi. Methyl hemiacetal of formaldehyde

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23. Draw the structures of the following derivatives :

Cyclopropanoneoxime

Watch Video Solution

24. Draw the structures of the following derivatives :

Acetaldehyde dimethyl acetal

Watch Video Solution

25. Draw the structures of the following derivatives :

The semicarbazone of cyclobutanone

Watch Video Solution

26. Draw the structures of the following derivatives :

The ethylene ketal of hexan-3-one

Watch Video Solution

27. Draw the structures of the following derivatives :

The methyl hemiacetal of formaldehyde

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28. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

PhMgBr and then H_3O^+

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29. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Tollens' reagent

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30. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Semicarbazide and weak acid

Watch Video Solution

31. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Excess ethanol and acid

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32. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Zinc amalgam and dilute hydrochloric acid.

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33. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Methanal

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34. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

2-Methylpentanal

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Watch Video Solution

35. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Benzaldehyde

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36. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Benzophenone

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37. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures

of the expected products of aldol condensation and Cannizzaro reaction.

Cyclohexanone

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38. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

1-Phenylpropanone

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39. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Phenylacetaldehyde

Watch Video Solution

40. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Butan-1-al

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41. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

2,2-Dimethylbutanal.

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42. How will you convert ethanal into the following compounds?

(i) Butane-1,3-diol

(ii) But-2-enal

(iii) But-2-enoic acid

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43. How will you convert ethanal into the following compounds?

(i) Butane-1,3-diol

(ii) But-2-enal

(iii) But-2-enoic acid

Watch Video Solution

44. How will you convert ethanal into the following compounds?

But-2-enoic acid.

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45. Write structure formulae and names of four possible aldol condensation products form propanal and butanal. In each case. Indicate which aldehyde acts as nucleophile and which as electrophile.

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46. Anorganic compound with molecular formula $C_9H_{10}O$ forms 2,4-DNP derivative, reduces Tollens' reagent and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1,2-benzenedicarboxylic acid. Identify the compound.

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47. How does formaldehyde react with :

Hydrogen

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48. IUPAC name of formaldehyde is

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49. How does formaldehyde react with :

CH_3MgBr

Watch Video Solution

50. How does formaldehyde react with :

HCN.

Watch Video Solution

51. How does formaldehyde react with :

Fehling's solution

Watch Video Solution

52. How does formaldehyde react with :

Caustic soda.

Watch Video Solution

53. Give important uses of formaldehyde.

Watch Video Solution

54. How would you prepare acetaldehyde from ethyl alcohol?

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55. How does acetaldehyde react with:

Hydrogen

Watch Video Solution

56. How does acetaldehyde react with:

Chlorine

Watch Video Solution

Watch Video Solution

57. How does acetaldehyde react with:

$NaHSO_3$

Watch Video Solution

58. How does acetaldehyde react with:

2,4-dinitrophenylhydrazine.

Watch Video Solution

59. How does acetaldehyde react with:

PCl_5

Watch Video Solution

60. How does acetaldehyde react with:

NH_2OH

Watch Video Solution

61. Give three important uses of acetaldehyde.

Watch Video Solution

62. Describe two methods for the preparation of acetone.

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63. How is acetone converted to:

Mesityl oxide

Watch Video Solution

64. How is acetone converted to:

Phorone

Watch Video Solution

65. How is acetone converted to:

Isopropyl alcohol

Watch Video Solution

66. How is acetone converted to:

ter-butyl alcohol

Watch Video Solution

67. How is acetone converted to:

Iodoform?

Watch Video Solution

68. Give important uses of acetone.

Watch Video Solution

69. Write the equations involved in the following reactions :

(i) Reimer-Tiemann reaction

(ii) Williamson's ether synthesis

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70. Explain the following reactions :

Cannizzaro reaction

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71. Explain the following reactions:

Friedel-Craft's reaction

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72. Rosenmund's Reaction

Watch Video Solution

73. Give one method each for industrial preparation of

Methanol

Watch Video Solution

74. Give one method each for industrial preparation of

Ethanal

Watch Video Solution

75. Describe aldol condensation.

Watch Video Solution

76. What is the action of ethanal on semicarbazide?

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77. Write giving equations a brief account of

Gatterman-Koch reaction

Watch Video Solution

78. Write giving equations a brief account of

Aldol condensation

Watch Video Solution

79. Write the equations a brief account of

Etard's reaction

Watch Video Solution

80. Write the equations and conditions to show how the following conversions are carried out :

Benzaldehyde into acetophenone

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81. Write the equations and conditions to show how the following conversions are carried out :

Acetaldehyde into-2-butanol

Watch Video Solution

82. Write the equations and conditions to show how the following conversions are carried out :

Ethanal to 2-propanol

Watch Video Solution

83. Write the equations and conditions to show how the following conversions are carried out :

Acetophenone to benzoic acid

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84. Conversion of Acetone to ter. butyl alcohol

Watch Video Solution

85. Complete the following reaction :

$C_6H_5COCl + (CH_3)_2Cdto$

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86. Complete the following reaction :

$CH_3CHO \xrightarrow{CH_3MgBr} \_\_ \xrightarrow{H_3O+} \_\_$

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87. Complete the following reaction :

$(CH_3CH_2COO)_2Ca \xrightarrow{\text{heat}}$

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88. Complete the following reaction :

$CH_3CHO \xrightarrow{LiAlH_4}$

Watch Video Solution

89. Complete the following reaction :

$CH_3CH_2CHO \xrightarrow{OH^-}$

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90. Give nucleophilic addition reaction of acetaldehyde with

Grignard's reagents

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91. Give nucleophilic addition reaction of acetaldehyde with

Ethyl alcohol

Watch Video Solution

92. Give nucleophilic addition reaction of acetaldehyde with

$NaHCO_3$

Watch Video Solution

93. Give nucleophilic addition reaction of acetaldehyde with

HCN

Watch Video Solution

94. What happens when benzene is treated with acetyl chloride in the presence of anhydrous $AlCl_3$

Watch Video Solution

95. How will you convert acetaldehyde to formaldehyde?

Watch Video Solution

96. Wolff-Kishner reduction.

Watch Video Solution

97. Give Examples of the following:

Clemmenson reduction

Watch Video Solution

98. Give a brief account of the following reaction:

Cross-Aldol condensation

Watch Video Solution

99. How will you convert formaldehyde to acetaldehyde ?

Watch Video Solution

100. Why HCHO reacts faster than CH_3CHO?

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101. (a) How many you account for the following :

(i) Aldehydes are more reactive than ketones towards nucleophiles.

(ii) The boiling points of aldehydes and ketones are lower than of the corresponding acids.

(iii) The aldehydes and ketones undergo a number of addition reactions.

(i) Acetaldehyde and benzaldehyde

(ii) Propanone and propanol

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102. How would you account for the following:

The boiling points of aldehydes and ketones are lower than that of the corresponding acids.

Watch Video Solution

103. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

104. Give chemical tests to distinguish between:

Propanone and propanal

Watch Video Solution

105. How will you convert acetaldehyde into the following compounds ?

Butan-2-one

Watch Video Solution

106. How will you convert acetaldehyde into the following compounds ?

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Watch Video Solution

107. How will you convert acetaldehyde into the following compounds ?

But-2-enal

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108. How will you convert acetaldehyde into the following compounds ?

Butan-1-ol

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109. How will you convert acetaldehyde into the following compounds ?

Butanoic acid

Watch Video Solution

110. How will you convert acetaldehyde into the following compounds ?

But-2-en-oic acid.

Watch Video Solution

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

(a) Ethanal and Propanal

(b) benzoic acid and phenol

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112. Give chemical tests to distinguish between the following pairs of compounds :

Propanal and propanone.

Watch Video Solution

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

Propanal and diethyl ether.

Watch Video Solution

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

Ethanol to 3-hydroxybutanal

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

Propanal to butanone

Watch Video Solution

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

propanone to propene

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

Benzaldehyde to 1-phenylpropan-1-ol

Watch Video Solution

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

Benzaldehyde to benzophenone

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

Benzaldehyde to α-hydroxyphenylacetic acid

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

Bromobenzene to 1-phenylethanol

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134. How will you bring about the following conversions :

Ethanoic acid to propanoic acid

Watch Video Solution

135. How will you bring about the following conversions :

Acetylene to acetic acid

Watch Video Solution

136. How will you bring about the following conversions :

Acetic acid to methylamine

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137. How will you bring about the following conversions :

Propanoic acid to lactic acid

Watch Video Solution

138. How will you bring about the following conversions?

Ethanol to ethanoic acid

Watch Video Solution

139. How will you bring about the following conversions?

Propanoic acid to acetic acid

Watch Video Solution

140. How will you bring about the following conversions?

Acetic acid to ethane

Watch Video Solution

141. How will you bring about the following conversions?

Benzonitrile to benzoic acid

Watch Video Solution

142. How will you bring about the following conversions?

Benzotrichloride to benzoic acid.

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143. Write the chemical equations, when:

Acetic acid reacts with Br_2 in the presence of phosphorus.

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144. Write the chemical equations, when:

Acetic acid reacts with methanol in presence of H_2SO_4

Watch Video Solution

145. Write the chemical equations, when:

Acetic acid reacts with $SOCl_2$

Watch Video Solution

146. Write the chemical equations, when:

Acetic acid reacts with $LiAlH_4$

Watch Video Solution

147. Write the chemical equations, when:

Acetic acid reacts with Cl_2 in presence of red phosphorus.

Watch Video Solution

148. Hell-Vohlard Zelinsky reaction

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Watch Video Solution

152. Give the structures of A, B and C in the following:

$$CH_3Mgl + CO_2 \xrightarrow{\text{Dry ether}} A \xrightarrow{PCl_5} B \xrightarrow{NH_3} C$$

Watch Video Solution

153. Give the structures of A, B and C in the following:

$$CH_3CHO \xrightarrow[H_2SO_4]{K_2Cr_2O_7} A \xrightarrow{PCl_5} B \xrightarrow[AlCl_3]{C_6H_6} C$$

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154. Account for the following: If $-NO_2$ or-COOH group is attached to carbon of benzene ring, electrophilic substitution becomes difficult.

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Dry chlorine is passed through acetic acid in presence of sunlight.

Watch Video Solution

156. What happens when:

Formic acid is reacted with ammoniacal $AgNO_3$ solution

Watch Video Solution

157. What happens when:

Acetic acid is heated with phosphorus pentoxide

Watch Video Solution

158. What happens when:

Formic acid is heated with Fehling's solution

Watch Video Solution

159. What happens when:

Ammonium acetate is dry distilled

Watch Video Solution

160. What happens when:

Acidified postassium permanganate is added to oxalic acid.

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161. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH(CH_3)CH_2CH_2 - CHO$

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162. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH_2COCH(C_2H_5)CH_2CH_2Cl$

Watch Video Solution

163. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH = CHCHO$

Watch Video Solution

164. Name the following compounds according to IUPAC system of nomenclature

$CH_3COCH_2COCH_3$

Watch Video Solution

165. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH(CH_3)CH_2C(CH_3)_2COCH_3$

Watch Video Solution

166. Name the following compounds according to IUPAC system of nomenclature

$(CH_3)_3CCH_2COOH$

Watch Video Solution

167. Name the following compounds according to IUPAC system of nomenclature

$OHCC_6H_4CHO - p$

Watch Video Solution

168. Draw the structures of the following compounds:

3-Methylbutanal

Watch Video Solution

169. Draw the structures of the following compounds:

p-Nitropropiophenone

Watch Video Solution

170. Draw the structures of the following compounds:

p-methylbenzaldehyde

Watch Video Solution

171. Draw the structures of the following compounds:

4-Methylpent-3-ene-2-one

Watch Video Solution

172. Draw the structures of the following compounds:

4-Chloropentan-2-one

Watch Video Solution

173. Draw the structures of the following compounds:

3-Bromo-4-phenylpentanoic acid

Watch Video Solution

174. Draw the structures of the following compounds:

p, p-Dihydroxybenzophenone

Watch Video Solution

175. Draw the structures of the following compounds:

Hex-2-en-4-ynoic acid.

Watch Video Solution

176. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$CH_3CO(CH_2)_4CH_3$

Watch Video Solution

177. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$CH_3CH_2CHBrCH_2CH(CH_3)CHO$

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178. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$CH_3(CH_2)_5CHO$

Watch Video Solution

179. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$Ph - CH = CH - CHO$

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180. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

Watch Video Solution

181. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$PhCOPh$

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182. Draw the structures of the following derivatives :

The 2,4-dinitrophenylhydrazone of benzaldehyde

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183. Draw the structures of the following derivatives :

Cyclopropanoneoxime

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184. Draw the structures of the following derivatives :

Acetaldehyde dimethyl acetal

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185. Draw the structures of the following derivatives :

The semicarbazone of cyclobutanone

Watch Video Solution

186. Draw the structures of the following derivatives :

The ethylene ketal of hexan-3-one

Watch Video Solution

187. Draw the structures of the following derivatives :

The methyl hemiacetal of formaldehyde

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188. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

PhMgBr and then H_3O^+

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189. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Tollens' reagent

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190. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Semicarbazide and weak acid

Watch Video Solution

191. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Excess ethanol and acid

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192. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Zinc amalgam and dilute hydrochloric acid.

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193. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Methanal

Watch Video Solution

194. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

2-Methylpentanal

Watch Video Solution

Watch Video Solution

195. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Benzaldehyde

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196. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Benzophenone

Watch Video Solution

197. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures

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Cyclohexanone

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198. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

1-Phenylpropanone

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199. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Phenylacetaldehyde

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200. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Butan-1-ol

Watch Video Solution

201. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

2,2-Dimethylbutanal.

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202. How will you convert ethanal into the following compounds?

Butane-1, 3-diol

Watch Video Solution

203. How will you convert ethanal into the following compounds?

(i) Butane-1,3-diol

(ii) But-2-enal

(iii) But-2-enoic acid

Watch Video Solution

204. How will you convert ethanal into the following compounds?

But-2-enoic acid.

Watch Video Solution

205. Write structure formulae and names of four possible aldol condensation products form propanal and butanal. In each case. Indicate which aldehyde acts as nucleophile and which as electrophile.

Watch Video Solution

206. Anorganic compound with molecular formula $C_9H_{10}O$ forms 2,4-DNP derivative, reduces Tollens' reagent and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1,2-benzenedicarboxylic acid. Identify the compound.

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207. How does formaldehyde react with :

Hydrogen

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208. How does formaldehyde react with :

CH_3MgBr

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209. How does formaldehyde react with :

HCN.

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210. How does formaldehyde react with :

Fehling's solution

Watch Video Solution

211. How does formaldehyde react with :

Caustic soda.

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212. Give important uses of formaldehyde.

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213. How would you prepare acetaldehyde from ethyl alcohol?

Watch Video Solution

214. How does acetaldehyde react with:

Hydrogen

Watch Video Solution

215. How does acetaldehyde react with:

Chlorine

Watch Video Solution

216. How does acetaldehyde react with:

$NaHSO_3$

Watch Video Solution

217. How does acetaldehyde react with:

2,4-dinitrophenylhydrazine.

Watch Video Solution

218. How does acetaldehyde react with:

PCl_5

Watch Video Solution

219. How does acetaldehyde react with:

NH_2OH

Watch Video Solution

220. Give three important uses of acetaldehyde.

Watch Video Solution

221. Describe two methods for the preparation of acetone.

Watch Video Solution

222. How is acetone converted to:

Mesityl oxide

Watch Video Solution

223. How is acetone converted to:

Phorone

Watch Video Solution

224. How is acetone converted to:

Isopropyl alcohol

Watch Video Solution

225. How is acetone converted to:

ter-butyl alcohol

Watch Video Solution

226. How is acetone converted to:

Iodoform?

Watch Video Solution

227. Give important uses of acetone.

Watch Video Solution

228. Reimer - Tiemann reaction.

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229. Explain the following reactions :

Cannizzaro reaction

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230. Explain the following reactions:

Friedel-Craft's reaction

Watch Video Solution

231. Rosenmund's Reaction

Watch Video Solution

232. Give one method each for industrial preparation of

Methanol

Watch Video Solution

233. Give one method each for industrial preparation of

Ethanal

Watch Video Solution

234. Describe aldol condensation.

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235. What is the action of ethanal on semicarbazide?

Watch Video Solution

236. Write giving equations a brief account of

Gatterman-Koch reaction

Watch Video Solution

237. Write giving equations a brief account of

Aldol condensation

Watch Video Solution

238. Write the equations a brief account of

Etard's reaction

Watch Video Solution

239. Write the equations and conditions to show how the following conversions are carried out :

Benzaldehyde into acetophenone

Watch Video Solution

240. Write the equations and conditions to show how the following conversions are carried out :

Acetaldehyde into-2-butanol

Watch Video Solution

241. Write the equations and conditions to show how the following conversions are carried out :

Ethanal to 2-propanol

Watch Video Solution

242. Write the equations and conditions to show how the following conversions are carried out :

Acetophenone to benzoic acid

Watch Video Solution

243. Write the equations and conditions to show how the following conversions are carried out :

Acetone to ter. butyl alcohol

Watch Video Solution

244. Complete the following reaction :

$C_6H_5COCl + (CH_3)_2Cdto$

Watch Video Solution

245. Complete the following reaction :

$CH_3CHO \xrightarrow{CH_3MgBr} \_\_ \xrightarrow{H_3O+} \_\_$

Watch Video Solution

246. Complete the following reaction :

$(CH_3CH_2COO)_2Ca \xrightarrow{\text{heat}}$

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247. Complete the following reaction :

$CH_3CHO \xrightarrow{LiAlH_4}$

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$CH_3CH_2CHO \xrightarrow{OH^-}$

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Butanoic acid

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(b) benzoic acid and phenol

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Propanal and diethyl ether.

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Propanal to butanone

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propanone to propene

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Benzaldehyde to 1-phenylpropan-1-ol

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321. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH_2COCH(C_2H_5)CH_2CH_2Cl$

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322. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH = CHCHO$

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323. Name the following compounds according to IUPAC system of nomenclature

$CH_3COCH_2COCH_3$

Watch Video Solution

324. Name the following compounds according to IUPAC system of nomenclature

$CH_3CH(CH_3)CH_2C(CH_3)_2COCH_3$

Watch Video Solution

325. Name the following compounds according to IUPAC system of nomenclature

$(CH_3)_3CCH_2COOH$

Watch Video Solution

326. Name the following compounds according to IUPAC system of nomenclature

$OHCC_6H_4CHO - p$

Watch Video Solution

327. Draw the structures of the following compounds:

3-Methylbutanal

Watch Video Solution

328. Draw the structures of the following compounds:

p-Nitropropiophenone

Watch Video Solution

329. Draw the structures of the following compounds:

p-methylbenzaldehyde

Watch Video Solution

330. Draw the structures of the following compounds:

4-Methylpent-3-ene-2-one

Watch Video Solution

331. Draw the structures of the following compounds:

4-Chloropentan-2-one

Watch Video Solution

332. Draw the structures of the following compounds:

3-Bromo-4-phenylpentanoic acid

Watch Video Solution

333. Draw the structures of the following compounds:

p, p-Dihydroxybenzophenone

Watch Video Solution

334. Draw the structures of the following compounds:

Hex-2-en-4-ynoic acid.

Watch Video Solution

335. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$CH_3CO(CH_2)_4CH_3$

Watch Video Solution

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$CH_3CH_2CHBrCH_2CH(CH_3)CHO$

Watch Video Solution

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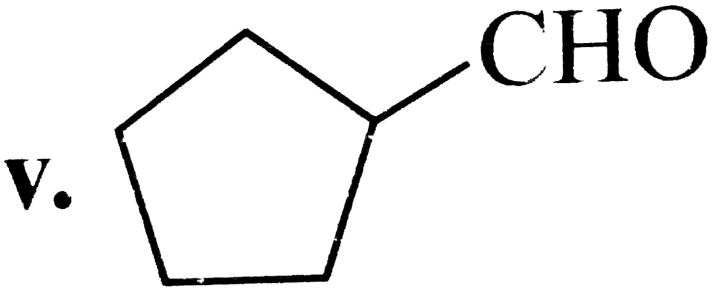
i. $CH_3CO(CH_2)_4CH_3$

ii. $CH_3CH_2CHBrCH_2CH(CH_3)CHO$

iii. $CH_3(CH_2)_5CHO$

iv. $Ph - CH = CH - CHO$

v. 

v.

vi. $PhCOPh$

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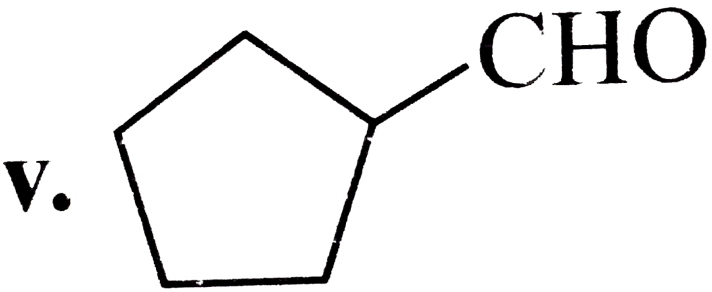
338. Write the IUPAC names of following ketones and aldehydes. Wherever possible, give common nemes also.

i. $CH_3CO(CH_2)_4CH_3$

ii. $CH_3CH_2CHBrCH_2CH(CH_3)CHO$

iii. $CH_3(CH_2)_5CHO$

iv. $Ph - CH = CH - CHO$

v. 

v.

vi. $PhCOPh$

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339. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

Watch Video Solution

340. Write the IUPAC names of the following ketones and aldehydes. Wherever possible, give also common names.

$PhCOPh$

Watch Video Solution

341. Draw the structures of the following derivatives :

The 2,4-dinitrophenylhydrazone of benzaldehyde

View Text Solution

342. Draw the structures of the following derivatives :

Cyclopropanoneoxime

Watch Video Solution

343. Draw the structures of the following derivatives :

Acetaldehyde dimethyl acetal

Watch Video Solution

344. Draw the structures of the following derivatives :

The semicarbazone of cyclobutanone

Watch Video Solution

345. Draw the structures of the following derivatives :

The ethylene ketal of hexan-3-one

Watch Video Solution

346. Draw the structures of the following derivatives :

The methyl hemiacetal of formaldehyde

Watch Video Solution

Watch Video Solution

347. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

PhMgBr and then H_3O^+

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348. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Tollens' reagent

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349. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Semicarbazide and weak acid

Watch Video Solution

350. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Excess ethanol and acid

Watch Video Solution

351. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:

Zinc amalgam and dilute hydrochloric acid.

Watch Video Solution

352. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Methanal

Watch Video Solution

353. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

2-Methylpentanal

Watch Video Solution

354. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Benzaldehyde

Watch Video Solution

355. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures

of the expected products of aldol condensation and Cannizzaro reaction.

Benzophenone

Watch Video Solution

356. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Cyclohexanone

Watch Video Solution

357. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

1-Phenylpropanone

Watch Video Solution

358. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Phenylacetaldehyde

Watch Video Solution

359. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

Butan-1-ol

Watch Video Solution

360. Which of the following compounds will undergo aldol condensation, which the Cannizzaro reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro reaction.

2,2-Dimethylbutanal.

Watch Video Solution

361. How will you convert ethanal into the following compounds?

Butane-1, 3-diol

Watch Video Solution

362. How will you convert acetaldehyde into the following compounds ?

But-2-enal

Watch Video Solution

363. How will you convert ethanal into the following compounds?

But-2-enoic acid.

Watch Video Solution

364. Write structure formulae and names of four possible aldol condensation products form propanal and butanal. In each case. Indicate which aldehyde acts as nucleophile and which as electrophile.

Watch Video Solution

365. Anorganic compound with molecular formula $C_9H_{10}O$ forms 2,4-DNP derivative, reduces Tollens' reagent and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1,2-benzenedicarboxylic acid. Identify the compound.

Watch Video Solution

366. How does formaldehyde react with :

Hydrogen

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367. How does formaldehyde react with :

CH_3MgBr

Watch Video Solution

368. How does formaldehyde react with :

HCN.

Watch Video Solution

369. How does formaldehyde react with :

Fehling's solution

Watch Video Solution

370. How does formaldehyde react with :

Caustic soda.

Watch Video Solution

371. Give important uses of formaldehyde.

Watch Video Solution

372. How would you prepare acetaldehyde from ethyl alcohol?

Watch Video Solution

373. How does acetaldehyde react with:

Hydrogen

Watch Video Solution

374. How does acetaldehyde react with:

Chlorine

Watch Video Solution

375. How does acetaldehyde react with:

$NaHSO_3$

Watch Video Solution

376. How does acetaldehyde react with:

2,4-dinitrophenylhydrazine.

Watch Video Solution

377. How does acetaldehyde react with:

PCl_5

Watch Video Solution

378. How does acetaldehyde react with:

NH_2OH

Watch Video Solution

379. Give three important uses of acetaldehyde.

Watch Video Solution

380. Describe two methods for the preparation of acetone.

Watch Video Solution

381. How is acetone converted to:

Mesityl oxide

Watch Video Solution

382. How is acetone converted to:

Phorone

Watch Video Solution

383. How is acetone converted to:

Isopropyl alcohol

Watch Video Solution

384. How is acetone converted to:

ter-butyl alcohol

Watch Video Solution

385. How is acetone converted to:

Iodoform?

Watch Video Solution

386. Give important uses of acetone.

Watch Video Solution

387. Reimer - Tiemann reaction.

Watch Video Solution

388. Explain the following reactions :

Cannizzaro reaction

Watch Video Solution

389. Explain the following reactions:

Friedel-Craft's reaction

Watch Video Solution

Watch Video Solution

390. Rosenmund's Reaction

Watch Video Solution

391. Give one method each for industrial preparation of

Methanol

Watch Video Solution

392. Give one method each for industrial preparation of

Ethanal

Watch Video Solution

393. Describe aldol condensation.

Watch Video Solution

394. What is the action of ethanal on semicarbazide?

Watch Video Solution

395. Write giving equations a brief account of

Gatterman-Koch reaction

Watch Video Solution

396. Write giving equations a brief account of

Aldol condensation

Watch Video Solution

397. Write the equations a brief account of

Etard's reaction

Watch Video Solution

398. Write the equations and conditions to show how the following conversions are carried out :

Benzaldehyde into acetophenone

Watch Video Solution

399. Write the equations and conditions to show how the following conversions are carried out :

Acetaldehyde into-2-butanol

Watch Video Solution

400. Write the equations and conditions to show how the following conversions are carried out :

Ethanal to 2-propanol

Watch Video Solution

Watch Video Solution

401. Write the equations and conditions to show how the following conversions are carried out :

Acetophenone to benzoic acid

Watch Video Solution

402. Write the equations and conditions to show how the following conversions are carried out :

Acetophenone to benzoic acid

Watch Video Solution

403. Complete the following reaction :

$C_6H_5COCl + (CH_3)_2Cdto$

Watch Video Solution

404. Complete the following reaction :

$$CH_3CHO \xrightarrow{CH_3MgBr} \_\_ \xrightarrow{H_3O+} \_\_$$

Watch Video Solution

405. Complete the following reaction :

$$(CH_3CH_2COO)_2Ca \xrightarrow{\text{heat}}$$

Watch Video Solution

406. Complete the following reaction :

$$CH_3CHO \xrightarrow{LiAlH_4}$$

Watch Video Solution

407. Complete the following reaction :

$$CH_3CH_2CHO \xrightarrow{OH^-}$$

Watch Video Solution

408. Give nucleophilic addition reaction of acetaldehyde with

Grignard's reagents

Watch Video Solution

409. Give nucleophilic addition reaction of acetaldehyde with

Ethyl alcohol

Watch Video Solution

410. Give nucleophilic addition reaction of acetaldehyde with

$NaHCO_3$

Watch Video Solution

411. Give nucleophilic addition reaction of acetaldehyde with

HCN

Watch Video Solution

412. What happens when benzene is treated with acetyl chloride in the presence of anhydrous $AlCl_3$

Watch Video Solution

413. How will you convert acetaldehyde to formaldehyde?

Watch Video Solution

414. Wolff-Kishner reduction.

Watch Video Solution

415. Give balanced equations for the following name reactions :

Clemmensen's reduction.

Watch Video Solution

416. Give a brief account of the following reaction:

Cross-Aldol condensation

Watch Video Solution

417. How will you convert formaldehyde to acetaldehyde ?

Watch Video Solution

418. Why HCHO reacts faster than CH_3CHO?

Watch Video Solution

419. (a) How many you account for the following :

(i) Aldehydes are more reactive than ketones towards nucleophiles.

(ii) The boiling points of aldehydes and ketones are lower than of the corresponding acids.

(iii) The aldehydes and ketones undergo a number of addition reactions.

(i) Acetaldehyde and benzaldehyde

(ii) Propanone and propanol

Watch Video Solution

420. How would you account for the following:

The boiling points of aldehydes and ketones are lower than that of the corresponding acids.

Watch Video Solution

421. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

422. Give chemical tests to distinguish between:

Propanone and propanal

Watch Video Solution

423. How will you convert acetaldehyde into the following compounds ?

Butan-2-one

Watch Video Solution

424. How will you convert acetaldehyde into the following compounds ?

Butane-1,3-diol

Watch Video Solution

425. How will you convert acetaldehyde into the following compounds ?

But-2-enal

Watch Video Solution

426. How will you convert acetaldehyde into the following compounds ?

Butan-1-ol

Watch Video Solution

427. How will you convert acetaldehyde into the following compounds ?

Butanoic acid

Watch Video Solution

428. How will you convert acetaldehyde into the following compounds ?

But-2-en-oic acid.

Watch Video Solution

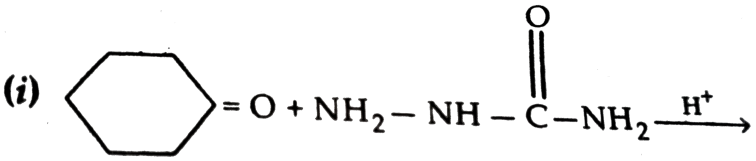
429. Give simple chemical tests to distinguish between the following pairs of compounds :

(a) Ethanal and Propanal

(b) benzoic acid and phenol

Watch Video Solution

430. (a) Write the products of the following reactions :

(i) 

(ii) $CH_3MgBr + CO_2 \xrightarrow[H_3O^+]{\text{Dry ether}}$

(iii) $CH_3CH_2COOH + Br_2 \xrightarrow{\text{Red Phosphorus}}$

(b) Write simple chemical tests to distinguish between the following pairs of compounds :

(i) Propanal and propanone (ii) Benzaldehyde and Benzoic acid

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

Propanal and diethyl ether.

Watch Video Solution

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

Ethanol to 3-hydroxybutanal

Watch Video Solution

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

Propanal to butanone

Watch Video Solution

434. (i) Write structure of the product(s) formed :

(a) $CH_3 - CH_2COH \xrightarrow{Cl_2, \text{red phosphorus}}$

(b) $C_6H_5COCi \xrightarrow{H_2, Pd - BaSO_4}$

(c) $2HCHO \xrightarrow{Conc. KOH}$

(ii) How will you bring the following conversions in not more than two steps:

(a) Propanone to propene.

(b) Benzyl chloride chloride to phenyl ethanoic acid.

Watch Video Solution

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

Benzaldehyde to 1-phenylpropan-1-ol

Watch Video Solution

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

Benzaldehyde to benzophenone

Watch Video Solution

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

Benzaldehyde to α-hydroxyphenylacetic acid

Watch Video Solution

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

Bromobenzene to 1-phenylethanol

Watch Video Solution

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

Benzene to m-nitroacetophenone.

Watch Video Solution

440. Describe four general methods for the preparation of saturated monocarboxylic acids.

Watch Video Solution

441. Write short notes on :

Kolbe's synthesis

Watch Video Solution

442. Write short notes on :

Hell-Volhard-Zelinsky (HVZ) reaction

Watch Video Solution

443. Write short notes on :

Decarboxylation of acids

Watch Video Solution

444. Write short notes on :

Esterification reaction.

Watch Video Solution

445. Explain why carboxylic acids behave as acids. Discuss briefly the effect of electron withdrawing and electron donating substituents on acid strength of carboxylic acids.

Watch Video Solution

446. How does acetic acid react with:

Thionyl chloride

Watch Video Solution

447. How does acetic acid react with:

Ammonia?

Watch Video Solution

448. What happens when acetic acid vapours are passed over P_2O_5?

Watch Video Solution

449. What is the cause of high solubility of acids in water?

Watch Video Solution

450. Account for acidic nature of carboxylic acids.

Watch Video Solution

451. How will you bring about the following conversions :

Acetic acid to glycine

Watch Video Solution

452. How will you bring about the following conversions :

Ethanoic acid to propanoic acid

Watch Video Solution

453. How will you bring about the following conversions :

Acetylene to acetic acid

Watch Video Solution

454. How will you bring about the following conversions :

Acetic acid to methylamine

Watch Video Solution

455. How will you bring about the following conversions :

Propanoic acid to lactic acid

Watch Video Solution

456. How will you bring about the following conversions?

Ethanol to ethanoic acid

Watch Video Solution

457. How will you bring about the following conversions?

Propanoic acid to acetic acid

Watch Video Solution

458. How will you bring about the following conversions?

Acetic acid to ethane

Watch Video Solution

459. How will you bring about the following conversions?

Benzonitrile to benzoic acid

Watch Video Solution

460. How will you bring about the following conversions?

Benzotrichloride to benzoic acid.

Watch Video Solution

461. Write the chemical equations, when:

Acetic acid reacts with Br_2 in the presence of phosphorus.

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462. Write the chemical equations, when:

Acetic acid reacts with methanol in presence of H_2SO_4

Watch Video Solution

463. Write the chemical equations, when:

Acetic acid reacts with $SOCl_2$

Watch Video Solution

464. Write the chemical equations, when:

Acetic acid reacts with $LiAlH_4$

Watch Video Solution

465. Write the chemical equations, when:

Acetic acid reacts with Cl_2 in presence of red phosphorus.

Watch Video Solution

466. Hell-Vohlard Zelinsky reaction

Watch Video Solution

467. Give a brief account of the following reactions:

Hunsdiecker's reaction

Watch Video Solution

468. Give a brief account of the following reactions:

Esterification reaction.

Watch Video Solution

469. Why carboxylic acids do not give the characteristic carbonylic reactions of carbonyl group?

Watch Video Solution

470. Give the structures of A, B and C in the following:

$$CH_3Mgl + CO_2 \xrightarrow{\text{Dry ether}} A \xrightarrow{PCl_5} B \xrightarrow{NH_3} C$$

Watch Video Solution

471. Give the structures of A, B and C in the following:

$$CH_3CHO \xrightarrow[H_2SO_4]{K_2Cr_2O_7} A \xrightarrow{PCl_5} B \xrightarrow[AlCl_3]{C_6H_6} C$$

Watch Video Solution

472. Account for the following: If $-NO_2$ or-COOH group is attached to carbon of benzene ring, electrophilic substitution becomes difficult.

Watch Video Solution

473. What happens when:

Dry chlorine is passed through acetic acid in presence of sunlight.

Watch Video Solution

474. What happens when:

Formic acid is reacted with ammoniacal $AgNO_3$ solution

Watch Video Solution

475. Fill in the blanks with suitable words :

When acetic acid is heated with phosphorus pentaoxide ..... is formed.

Watch Video Solution

476. What happens when:

Formic acid is heated with Fehling's solution

Watch Video Solution

477. What happens when:

Ammonium acetate is dry distilled

Watch Video Solution

478. Give balanced equation for the following reaction :

Acidified potassium permanganate and oxalic acid.

Watch Video Solution

ISC EXAMINATION QUESTIONS (PART-I OBJECTIVE QUESTIONS) (FILL IN THE BLANKS)

1. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Acetaldehyde in presence of NaOH gives ..... and this reaction is called .....

Watch Video Solution

2. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

An alkyl group attached to the carbonyl group exerts a.....effect and thus .....the reactivity of carbonyl group.

Watch Video Solution

3. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Acetaldehyde reacts with HCN to give ..... which on hydrolysis gives .....

Watch Video Solution

4. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

A ..... precipitate is obtained on adding iodine and sodium hydroxide to.....

Watch Video Solution

5. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

When benzaldehyde reacts with ..... it forms ..... and $POCl_3$

Watch Video Solution

6. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Hydrolysis of methyl propanoate gives..... and .....

Watch Video Solution

7. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde when treated with an alcoholic solution of ..... forms .....

Watch Video Solution

8. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde undergoes ..... reaction on treatment with concentrated sodium hydroxide because it has ..... atom.

Watch Video Solution

9. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal

chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde undergoes ..... of α-hydrogen atom.

Watch Video Solution

10. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Acetaldehyde in presence of NaOH gives ..... and this reaction is called .....

Watch Video Solution

11. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

An alkyl group attached to the carbonyl group exerts a.....effect and thus .....the reactivity of carbonyl group.

Watch Video Solution

12. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Acetaldehyde reacts with HCN to give ..... which on hydrolysis gives .....

Watch Video Solution

13. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

A ..... precipitate is obtained on adding iodine and sodium hydroxide to.....

Watch Video Solution

14. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

When benzaldehyde reacts with ..... it forms ..... and $POCl_3$

Watch Video Solution

15. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Hydrolysis of methyl propanoate gives..... and .....

Watch Video Solution

16. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde when treated with an alcoholic solution of ..... forms .....

Watch Video Solution

17. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde undergoes ..... reaction on treatment with concentrated sodium hydroxide because it has ..... atom.

Watch Video Solution

18. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal

chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde undergoes ..... of α-hydrogen atom.

Watch Video Solution

19. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Acetaldehyde in presence of NaOH gives ..... and this reaction is called .....

Watch Video Solution

20. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

An alkyl group attached to the carbonyl group exerts effect and thus .....the reactivity of carbonyl group.

Watch Video Solution

21. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Acetaldehyde reacts with HCN to give ..... which on hydrolysis gives .....

Watch Video Solution

22. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

A ..... precipitate is obtained on adding iodine and sodium hydroxide to.....

Watch Video Solution

23. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

When benzaldehyde reacts with ..... it forms ..... and $POCl_3$

Watch Video Solution

24. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Hydrolysis of methyl propanoate gives..... and .....

Watch Video Solution

25. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms, no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde when treated with an alcoholic solution of ..... forms .....

Watch Video Solution

26. (Increases, decreases, positive, efficient, 68, non-efficient, no α-hydrogen, negative, Rosenmund's, greater, Cannizzaro, 74, commonion effect, lesser, buffer action, diamagnetic, paramagnetic)

Benzaldehyde undergoes_____in reaction on treatment with concentrated sodium hydroxide because it has_____atom.

Watch Video Solution

27. (Aldol, benzoin, +I, -I, decreases, increases, cyanohydrin, lactic acid, tartaric acid, yellow, white, acetone, penta-3-one, PCl_3, PCl, benzal chloride, methanol, propanoic acid, ethanol, KOH, KCN, α-hydrogen atoms,

no α-hydrogens, Cannizzaro's, absence, presence)

Benzaldehyde undergoes ..... of α-hydrogen atom.

Watch Video Solution

ISC EXAMINATION QUESTIONS (PART-I OBJECTIVE QUESTIONS) (MULTIPLE CHOICE QUESTION)

1. Formic acid is prepared by heating oxalic acid with

A. glycol

B. glycerol

C. glycine

D. acetic anyhdride

Answer: B

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2. Acetaldehyde on treatment with hydrogen cyanide followed by hydrolysis gives:

A. formic acid

B. acetic acid

C. lactic acid

D. tartaric acid

Answer: C

Watch Video Solution

3. Effervescence takes place when sodium carbonate solution is added to

A. formaldehyde

B. acetaldehyde

C. acetic acid

D. phenol

Answer: C

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4. The compound which gives a positive haloform test and a positive Fehling solution test is :

A. acetone

B. acetaldehyde

C. formaldehyde

D. diethyl ether

Answer: B

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5. Benzaldehyde, when heated with an alcoholic solution of potassium cyanide, forms :

A. Benzyl alcohol

B. Benzoin

C. Hydrobenzamide

D. Benzoic acid

Answer: B

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6. When acetic acid is reacted with calcium hydroxide and the product is distilled dry, the i compound formed is :

A. Calcium acetate

B. Acetone

C. Acetaldehyde

D. Acetic anhydride

Answer: B

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7. When acetaldehyde is treated with Grignard reagent, followed by hydrolysis the product formed is :

A. primary alcohol

B. secondary alcohol

C. carboxylic acid

D. tertiary alcohol

Answer: B

Watch Video Solution

8. In the equation

$CH_3COOH + Cl_2 + \xrightarrow[-HCl]{\text{red P}} A$. The compound A is :

A. CH_3C_2Cl

B. $ClCH_2COOH$

C. CH_3Cl

D. CH_3COCl

Answer: B

Watch Video Solution

9. Formic acid is prepared by heating oxalic acid with

A. glycol

B. glycerol

C. glycine

D. acetic anyhdride

Answer: B

Watch Video Solution

10. Acetaldehyde on treatment with hydrogen cyanide followed by hydrolysis gives:

A. formic acid

B. acetic acid

C. lactic acid

D. tartaric acid

Answer: C

Watch Video Solution

11. Effervescence takes place when sodium carbonate solution is added to

A. formaldehyde

B. acetaldehyde

C. acetic acid

D. phenol

Answer: C

Watch Video Solution

12. The compound which gives a positive haloform test and a positive Fehling solution test is :

A. acetone

B. acetaldehyde

C. formaldehyde

D. diethyl ether

Answer: B

Watch Video Solution

13. Benzaldehyde, when heated with an alcoholic solution of potassium cyanide, forms :

A. Benzyl alcohol

B. Benzoin

C. Hydrobenzamide

D. Benzoic acid

Answer: B

Watch Video Solution

14. When acetic acid is reacted with calcium hydroxide and the product is distilled dry, the i compound formed is :

A. Calcium acetate

B. Acetone

C. Acetaldehyde

D. Acetic anhydride

Answer: B

Watch Video Solution

15. When acetaldehyde is treated with Grignard reagent, followed by hydrolysis the product formed is :

A. primary alcohol

B. secondary alcohol

C. carboxylic acid

D. tertiary alcohol

Answer: B

Watch Video Solution

16. In the equation

$CH_3COOH + Cl_2 + \xrightarrow[-HCl]{\text{red P}} A$. The compound A is :

A. CH_3C_2Cl

B. $ClCH_2COOH$

C. CH_3Cl

D. CH_3COCl

Answer: B

Watch Video Solution

17. Formic acid is prepared by heating oxalic acid with

A. glycol

B. glycerol

C. glycine

D. acetic anyhdride

Answer: B

Watch Video Solution

18. Acetaldehyde on treatment with hydrogen cyanide followed by hydrolysis gives:

A. formic acid

B. acetic acid

C. lactic acid

D. tartaric acid

Answer: C

Watch Video Solution

19. Effervescence takes place when sodium carbonate solution is added to

A. formaldehyde

B. acetaldehyde

C. acetic acid

D. phenol

Answer: C

Watch Video Solution

20. The compound which gives a positive haloform test and a positive Fehling solution test is :

A. acetone

B. acetaldehyde

C. formaldehyde

D. diethyl ether

Answer: B

Watch Video Solution

21. Benzaldehyde, when heated with an alcoholic solution of potassium cyanide, forms :

A. Benzyl alcohol

B. Benzoic

C. Hydrobenzamide

D. Benzoic acid

Answer: B

Watch Video Solution

22. When acetic acid is reacted with calcium hydroxide and the product is distilled dry, the i compound formed is :

A. Calcium acetate

B. Acetone

C. Acetaldehyde

D. Acetic anhydride

Answer: B

Watch Video Solution

23. When acetaldehyde is treated with Grignard reagent, followed by hydrolysis the product formed is :

A. primary alcohol

B. secondary alcohol

C. carboxylic acid

D. tertiary alcohol

Answer: B

Watch Video Solution

24. In the equation $CH_3COOH + Cl_2 \xrightarrow[-HCl]{\text{RedP}} A$, the compound A is :

A. CH_3C_2Cl

B. $ClCH_2COOH$

C. CH_3Cl

D. CH_3COCl

Answer: B

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ISC EXAMINATION QUESTIONS (PART-I OBJECTIVE QUESTIONS) (CORRECT THE FOLLOWING STATEMENTS)

1. Write true or false. Acetone gives a white precipitate on treatment with sodium chloride.

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2. Write true or false. Acetaldehyde undergoes Cannizzaro's reaction on treatment with dilute alkali.

Watch Video Solution

3. Formaldehyde undergoes Cannizzaro's reaction since it has one alpha hydrogen atom.

Watch Video Solution

4. Write true or false. Acetone gives a white precipitate on treatment with sodium chloride.

Watch Video Solution

5. Write true or false. Acetaldehyde undergoes Cannizzaro's reaction on treatment with dilute alkali.

Watch Video Solution

6. Formaldehyde undergoes Cannizzaro's reaction since it has one alpha hydrogen atom.

Watch Video Solution

7. Write true or false. Acetone gives a white precipitate on treatment with sodium chloride.

Watch Video Solution

8. Write true or false. Acetaldehyde undergoes Cannizzaro's reaction on treatment with dilute alkali.

Watch Video Solution

9. How will you account for the following:

Formaldehyde gives Cannizzaro's reaction but acetaldehyde does not.

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ISC EXAMINATION QUESTIONS (PART-I OBJECTIVE QUESTIONS)

1. Match the following :

(*i*) Cannizzaro	(*a*) Tollen's reagent
(*ii*) Urotropine	(*b*) Aldol condensation
(*iii*) Acetaldehyde	(*c*) Acetone
(*iv*) Iodoform	(*d*) Formaldehyde
(*v*) Ammoniacal silver nitrate	(*e*) Benzaldehyde

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2. Match the following :

(*i*) Cannizzaro	(*a*) Tollen's reagent
(*ii*) Urotropine	(*b*) Aldol condensation
(*iii*) Acetaldehyde	(*c*) Acetone
(*iv*) Iodoform	(*d*) Formaldehyde
(*v*) Ammoniacal silver nitrate	(*e*) Benzaldehyde

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3. Match the following :

(*i*) Cannizzaro	(*a*) Tollen's reagent
(*ii*) Urotropine	(*b*) Aldol condensation
(*iii*) Acetaldehyde	(*c*) Acetone
(*iv*) Iodoform	(*d*) Formaldehyde
(*v*) Ammoniacal silver nitrate	(*e*) Benzaldehyde

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ISC EXAMINATION QUESTIONS (PART-II DESCRIPTIVE QUESTIONS) (ALDEHYDES AND KETONES)

1. Give one test to distinguish between acetaldehyde and formaldehyde.

Watch Video Solution

2. Write balanced chemical equations for the following and name the reactions occurring in each case :

(A) Benzaldehyde react with an alcoholic solution of potassium cyanide.

(B) Propanone is treated with iodine and excess of alkali and warmed.

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3. Write balanced chemical equations for the following and name the reactions occurring in each case :

(A) Benzaldehyde react with an alcoholic solution of potassium cyanide.

(B) Propanone is treated with iodine and excess of alkali and warmed.

Watch Video Solution

4. Explain the following with atleast one example:

Rosenmund's reduction

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5. Explain the following with atleast one example:

Haloform reaction.

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6. Give one reason: Acetone reacts with hydroxylamine to form only one product which has no. geometrical isomer, but acetaldehyde reacts with hydroxylamine to form a product which has two geometrical isomers.

Watch Video Solution

7. Write balanced equation for the preparation of urotropine.

Watch Video Solution

8. Give one chemical test to distinguish between acetaldehyde and acetone.

Watch Video Solution

9. Give one example each of the following name reactions:

Cannizzaro's reaction

Watch Video Solution

10. Give balanced equations for the following name reactions :

Benzoin condensation

Watch Video Solution

11. Give one example each of the following name reactions:

Friedel-Craft's reaction

Watch Video Solution

12. Write balanced equation for the reaction between acetone and phosphorus pentachloride.

Watch Video Solution

13. How will you bring about the following conversion : acetaldehyde to acetamide ?

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14. Give the name of the following reaction:

$$CH_3CHO + CH_3COCH_3 \xrightarrow{OH^-} CH_3CH(OH)CH_2COCH_3$$

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15. Identify the product A,B,C and D

$$C_6H_6 \xrightarrow[\text{Anhyd. } AlCl_3]{CH_3Cl} A \xrightarrow[CCl_4]{CrO_2Cl_2} B \xrightarrow[NaOH]{Conc.} C + D.$$

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16. Give balanced equation for the following reaction: Acetaldehyde reacted with phenylhydrazine.

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17. How can the following conversion be brought about: 2-propanol to acetoxime

Watch Video Solution

18. Give one example of Clemmenson's reduction

Watch Video Solution

19. Give balanced equation for the following reaction:

Benzaldehyde is treaed with hydrogen cyanide.

Watch Video Solution

20. Give an example (equation) for each of the following name reactions :

Aldol condensation.

Watch Video Solution

21. Give an example (equation) for each of the following name reactions :

Rosenmund's reduction.

Watch Video Solution

22. Give one good chemical test to distinguish between benzaldehyde and acetone.

Watch Video Solution

23. Give balanced equations for the following:

Acetone reacts with hydrogen in the presence of heated copper.

Watch Video Solution

24. Carry out the following conversions :

Ethanol to acetone.

Watch Video Solution

25. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Identify A to E.

Watch Video Solution

26. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Give the chemical reaction when A is treated with NaOH and name the reaction.

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27. Write the formula of the product formed when formaldehyde reacts with ammonia and name the product.

Watch Video Solution

28. Give one good chemical test to distinguish between methanal and ethanal.

Watch Video Solution

29. Give balanced equations for the following reactions:

Benzaldehyde and hydroxylamine.

Watch Video Solution

30. Give balanced equation for the preparation of salicylaldehyde from phenol.

Watch Video Solution

31. How can the conversion of benzoic acid to benzaldehyde be brought about ?

Watch Video Solution

32. Write balanced chemical equation for the reaction and name the reaction: Benzaldehyde is treated with 50% sodium hydroxide solution.

Watch Video Solution

33. Give one chemical test to distinguish between acetone and phenol.

Watch Video Solution

34. How can the following conversions be brought about :

Acetaldehyde to formaldehyde.* *

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35. Give balanced equations for the following reactions :

Acetaldehyde is heated with hydroiodic acid in the presence of red phosphorous.

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36. Give balanced equations for the following reactions :

Calcium acetate is subjected to dry distillation.

Watch Video Solution

37. Give balanced equations for the following reactions :

Benzaldehyde is treated with sodium bisulphite.

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38. (i) An organic compound A with molecular formula C_7H_8 on oxidation by chromyl chloride in the presence of CCl_4 gives a compound B which gives positive Tollen's test. The compound B on treatment with NaOH followed by acid hydrolysis gives two product C and D. C on oxidation gives B which on further oxidation gives D. the compound D on distillation with sodalime gives a hydrocarbon E. Below $60^\circ C$,

concentrated nitric acid reacts with E in the presence of concentrated sulphuric acid forming a compound F. identify the compounds A,B,C,D,E and F.

(ii) Give chemical test to distinguish : Formaldehyde and acetaldehyde.

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39. Give balanced equation for Clemmenson's reduction.

Watch Video Solution

40. Identify the compounds A,B,C,D,E, and F :

$$CH_3COCH_3 \xrightarrow[(O)]{\text{Conc.}HNO_3} A \xrightarrow{SOCl_2} B \xrightarrow{NH_3} C \xrightarrow{LiAlH_4} D \xrightarrow{HNO_2} E \xrightarrow{CH_3COCl} aF$$

Watch Video Solution

41. Give balanced equations for the following name reactions :

Rosenmund reaction

Watch Video Solution

42. Give balanced equation for the reaction:

Formaldehyde is treated with ammonia.

Watch Video Solution

43. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

44. Acetaldehyde to acetaldehydephenylhydrazone.

Watch Video Solution

45. How can the following conversions be brought about :

Methyl chloride to acetone.

Watch Video Solution

46. Give balanced equation for the benzoin condenstiaon.

Watch Video Solution

47. Give chemical test to distinguish :

Formaldehyde and acetaldehyde

Watch Video Solution

48. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated

separately with PCl_5, they give two different organic products D and E.

Identify A to E.

Watch Video Solution

49. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E.

Give the chemical reaction when A is treated with NaOH and name the reaction.

Watch Video Solution

50. Give one test to distinguish between acetaldehyde and formaldehyde.

Watch Video Solution

51. Explain the following with atleast one example:

Rosenmund's reduction

Watch Video Solution

52. Explain the following with atleast one example:

Haloform reaction.

Watch Video Solution

53. Give one reason: Acetone reacts with hydroxylamine to form only one product which has no. geometrical isomer, but acetaldehyde reacts with hydroxylamine to form a product which has two geometrical isomers.

Watch Video Solution

54. Write balanced equation for the preparation of urotropine.

Watch Video Solution

55. Give one chemical test to distinguish between acetaldehyde and acetone.

Watch Video Solution

56. Give one example each of the following name reactions:

Cannizzaro's reaction

Watch Video Solution

57. Give balanced equations for the following name reactions :

Benzoin condensation

Watch Video Solution

58. Give one example each of the following name reactions:

Friedel-Craft's reaction

Watch Video Solution

59. Write balanced equation for the reaction between acetone and phosphorus pentachloride.

Watch Video Solution

60. How will you bring about the following conversion : acetaldehyde to acetamide ?

Watch Video Solution

61. Give the name of the following reaction:

$$CH_3CHO + CH_3COCH_3 \xrightarrow{OH^-} CH_3CH(OH)CH_2COCH_3$$

Watch Video Solution

62. Identify the product A,B,C and D

$$C_6H_6 \xrightarrow[\text{Anhyd. } AlCl_3]{CH_3Cl} A \xrightarrow[CCl_4]{CrO_2Cl_2} B \xrightarrow[NaOH]{Conc.} C + D.$$

Watch Video Solution

63. Give balanced equation for the following reaction: Acetaldehyde reacted with phenylhydrazine.

Watch Video Solution

64. How can the following conversion be brought about: 2-propanol to acetoxime

Watch Video Solution

65. Give one example of Clemmenson's reduction

Watch Video Solution

66. Give balanced equation for the following reaction:

Benzaldehyde is treaed with hydrogen cyanide.

Watch Video Solution

67. Give an example (equation) for each of the following name reactions :

Aldol condensation.

Watch Video Solution

68. Give an example (equation) for each of the following name reactions :

Rosenmund's reduction.

Watch Video Solution

69. Give one good chemical test to distinguish between benzaldehyde and acetone.

Watch Video Solution

70. Give balanced equations for the following:

Acetone reacts with hydrogen in the presence of heated copper.

Watch Video Solution

71. Carry out the following conversions :

Ethanol to acetone.

Watch Video Solution

72. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Identify A to E.

Watch Video Solution

73. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Give the chemical reaction when A is treated with NaOH and name the reaction.

Watch Video Solution

74. Write the formula of the product formed when formaldehyde reacts with ammonia and name the product.

Watch Video Solution

75. Give one good chemical test to distinguish between methanal and ethanal.

Watch Video Solution

76. Give balanced equations for the following reactions:

Benzaldehyde and hydroxylamine.

Watch Video Solution

77. Give balanced equation for the preparation of salicylaldehyde from phenol.

Watch Video Solution

78. Conversion of Benzoic acid to benzaldehyde

Watch Video Solution

79. Write balanced chemical equation for the reaction and name the reaction: Benzaldehyde is treated with 50% sodium hydroxide solution.

Watch Video Solution

80. Give one chemical test to distinguish between acetone and phenol.

Watch Video Solution

81. How can the following conversions be brought about :

Acetaldehyde to formaldehyde.* *

Watch Video Solution

Watch Video Solution

82. Give balanced equations for the following reactions :

Acetaldehyde is heated with hydroiodic acid in the presence of red phosphorous.

Watch Video Solution

83. Give balanced equations for the following reactions :

Calcium acetate is subjected to dry distillation.

Watch Video Solution

84. Give balanced equations for the following reactions :

Benzaldehyde is treated with sodium bisulphite.

Watch Video Solution

85. (i) An organic compound A with molecular formula C_7H_8 on oxidation by chromyl chloride in the presence of CCl_4 gives a compound B which gives positive Tollen's test. The compound B on treatment with NaOH followed by acid hydrolysis gives two product C and D. C on oxidation gives B which on further oxidation gives D. the compound D on distillation with sodalime gives a hydrocarbon E. Below $60^\circ C$, concentrated nitric acid reacts with E in the presence of concentrated sulphuric acid forming a compound F. identify the compounds A,B,C,D,E and F.

(ii) Give chemical test to distinguish : Formaldehyde and acetaldehyde.

Watch Video Solution

86. Give balanced equation for Clemmenson's reduction.

Watch Video Solution

87. Identify the compounds A,B,C,D,E, and F :

$$CH_3COCH_3 \xrightarrow[(O)]{\text{Conc.}HNO_3} A \xrightarrow{SOCl_2} B \xrightarrow{NH_3} C \xrightarrow{LiAlH_4} D \xrightarrow{HNO_2} E \xrightarrow{CH_3COCl} aF$$

Watch Video Solution

88. Give balanced equations for the following name reactions :

Rosenmund reaction

Watch Video Solution

89. Give balanced equation for the reaction:

Formaldehyde is treated with ammonia.

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90. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

91. How can the following conversions be brought about :

Acetaldehyde to acetaldehyde phenyl hydrazone.

Watch Video Solution

92. How can the following conversions be brought about :

Methyl chloride to acetone.

Watch Video Solution

93. Give balanced equation for the benzoin condenstiaon.

Watch Video Solution

94. Give chemical test to distinguish :

Formaldehyde and acetaldehyde

Watch Video Solution

95. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Identify A to E.

Watch Video Solution

96. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E.

Give the chemical reaction when A is treated with NaOH and name the reaction.

Watch Video Solution

97. Give chemical test to distinguish :

Formaldehyde and acetaldehyde

Watch Video Solution

98. Write balanced chemical equations for the following and name the reactions occurring in each case :

(A) Benzaldehyde react with an alcoholic solution of potassium cyanide.

(B) Propanone is treated with iodine and excess of alkali and warmed.

Watch Video Solution

99. Write balanced chemical equations for the following and name the reactions occurring in each case :

(A) Benzaldehyde react with an alcoholic solution of potassium cyanide.

(B) Propanone is treated with iodine and excess of alkali and warmed.

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100. Explain the following with atleast one example:

Rosenmund's reduction

Watch Video Solution

101. Explain the following with atleast one example:

Haloform reaction.

Watch Video Solution

102. Give one reason: Acetone reacts with hydroxylamine to form only one product which has no. geometrical isomer, but acetaldehyde reacts with hydroxylamine to form a product which has two geometrical isomers.

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103. Write balanced equation for the preparation of urotropine.

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104. Give one chemical test to distinguish between acetaldehyde and acetone.

Watch Video Solution

105. Give one example each of the following name reactions:

Cannizzaro's reaction

Watch Video Solution

106. Give balanced equations for the following name reactions :

Benzoin condensation

Watch Video Solution

107. Give one example each of the following name reactions:

Friedel-Craft's reaction

Watch Video Solution

108. Write balanced equation for the reaction between acetone and phosphorus pentachloride.

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109. How will you bring about the following conversion : acetaldehyde to acetamide ?

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110. Give the name of the following reaction:

$$CH_3CHO + CH_3COCH_3 \xrightarrow{OH^-} CH_3CH(OH)CH_2COCH_3$$

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111. Identify the product A,B,C and D

$$C_6H_6 \xrightarrow[\text{Anhyd. } AlCl_3]{CH_3Cl} A \xrightarrow[CCl_4]{CrO_2Cl_2} B \xrightarrow[NaOH]{Conc.} C + D.$$

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112. Give balanced equation for the following reaction: Acetaldehyde reacted with phenylhydrazine.

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113. How can the following conversion be brought about: 2-propanol to acetoxime

Watch Video Solution

114. Give one example of Clemmenson's reduction

Watch Video Solution

115. Give balanced equation for the following reaction:

Benzaldehyde is treaed with hydrogen cyanide.

Watch Video Solution

116. Give an example (equation) for each of the following name reactions :

Aldol condensation.

Watch Video Solution

117. Give an example (equation) for each of the following name reactions :

Rosenmund's reduction.

Watch Video Solution

118. Give one good chemical test to distinguish between benzaldehyde and acetone.

Watch Video Solution

119. Give balanced equations for the following:

Acetone reacts with hydrogen in the presence of heated copper.

Watch Video Solution

120. Carry out the following conversions :

Ethanol to acetone.

Watch Video Solution

121. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Identify A to E.

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122. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated

separately with PCl_5, they give two different organic products D and E. Give the chemical reaction when A is treated with NaOH and name the reaction.

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123. Write the formula of the product formed when formaldehyde reacts with ammonia and name the product.

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124. Give one good chemical test to distinguish between methanal and ethanal.

Watch Video Solution

125. Give balanced equations for the following reactions:

Benzaldehyde and hydroxylamine.

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126. Give balanced equation for the preparation of salicylaldehyde from phenol.

Watch Video Solution

127. How can the conversion of benzoic acid to benzaldehyde be brought about ?

Watch Video Solution

128. Benzaldehyde is treated with 50% sodium hydroxide solution.

Watch Video Solution

129. Give one chemical test to distinguish between acetone and phenol.

Watch Video Solution

130. How can the following conversions be brought about :

Acetaldehyde to formaldehyde.* *

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131. Give balanced equations for the following reactions :

Acetaldehyde is heated with hydroiodic acid in the presence of red phosphorous.

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132. Give balanced equations for the following reactions :

Calcium acetate is subjected to dry distillation.

Watch Video Solution

133. Give balanced equations for the following reactions :

Benzaldehyde is treated with sodium bisulphite.

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134. (i) An organic compound A with molecular formula C_7H_8 on oxidation by chromyl chloride in the presence of CCl_4 gives a compound B which gives positive Tollen's test. The compound B on treatment with NaOH followed by acid hydrolysis gives two product C and D. C on oxidation gives B which on further oxidation gives D. the compound D on distillation with sodalime gives a hydrocarbon E. Below $60^\circ C$, concentrated nitric acid reacts with E in the presence of concentrated sulphuric acid forming a compound F. identify the compounds A,B,C,D,E and F.

(ii) Give chemical test to distinguish : Formaldehyde and acetaldehyde.

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135. Give balanced equation for Clemmenson's reduction.

Watch Video Solution

136. Identify the compounds A,B,C,D,E, and F :

$$CH_3COCH_3 \xrightarrow[(O)]{\text{Conc.}HNO_3} A \xrightarrow{SOCl_2} B \xrightarrow{NH_3} C \xrightarrow{LiAlH_4} D \xrightarrow{HNO_2} E \xrightarrow{CH_3COCl} aF$$

Watch Video Solution

137. Give balanced equations for the following name reactions :

Rosenmund reaction

Watch Video Solution

138. Give balanced chemical equation for the following reactions :

Formaldehyde is treated with ammonia.

Watch Video Solution

139. Give chemical tests to distinguish between:

acetaldehyde and benzaldehyde

Watch Video Solution

140. Acetaldehyde to acetaldehydephenylhydrazone.

Watch Video Solution

141. How can the following conversions be brought about :

Methyl chloride to acetone.

Watch Video Solution

142. Give balanced equation for the benzoin condenstiaon.

Watch Video Solution

143. Give chemical test to distinguish :

Formaldehyde and acetaldehyde

Watch Video Solution

144. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E. Identify A to E.

Watch Video Solution

145. An organic compound A has the molecular formula of C_7H_6O. When A is treated with NaOH followed by acid hydrolysis, it gives two products, B and C. When B is oxidised, it gives A. When A and C are each treated separately with PCl_5, they give two different organic products D and E.

Give the chemical reaction when A is treated with NaOH and name the reaction.

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ISC EXAMINATION QUESTIONS (PART-II DESCRIPTIVE QUESTIONS) (CARBOXYLIC ACIDS)

1. Write the relevant equation to convert acetic acid to acetone.

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2. Give one test to distinguish between acetone and acetic acid.

Watch Video Solution

3. Write balanced chemical equation and name the reaction: Benzoic acid is treated with soda-lime.

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4. How would you convert :

benzoic acid to benzene?

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5. How will you bring about following conversion : Formic acid to oxalic acid ?

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6. How will you convert chloroacetic acid to glycine?

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7. Arrange the followsing in the increasing order of acid strengths:

(i) Fluoroacetic acid (ii) Chloroacetic acid (iii) Acetic acid (iv) Formic acid (v) Propionic acid.

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8. How will you bring about the following conversion? Phenol to benzoic acid.

Watch Video Solution

9. How will you distinguish between the following pair of compounds ? Oxalic acid and acetic acid.

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10. Draw the isomers of a compound with the molecular formula $C_4H_4O_4$

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11. Give balanced equation for the following reaction: Formic acid is heated with Tollens' reagent.

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12. Give one example of Hell-Volhard Zelinsky (HVZ) reaction.

Watch Video Solution

13. Give one good chemical test to distinguish between oxalic acid and benzoic acid.

Watch Video Solution

14. Give balanced equation for the following reaction: Benzoic acid solution is treated with sodium carbonate.

Watch Video Solution

15. Carry out the following conversions :

Methyl chloride to acetic acid.

Watch Video Solution

16. Carry out the following conversions :

Benzene to benzoic acid.

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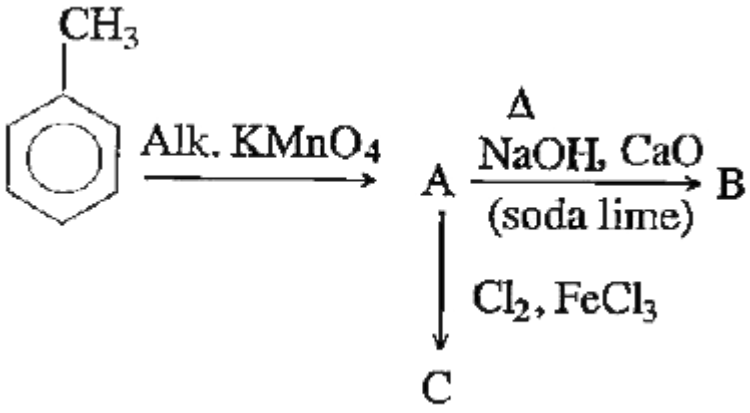
17. Identify the products A, B and C:



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18. Give balanced equations for the following reactions:

Benzoic acid and phosphorus pentachlo-ride.

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19. Give one good chemical test to distinguish between urea and benzoic acid.

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20. An aliphatic hydrocarbon A on treatment with sulphuric acid in the presence of $HgSO_4$ yields a liquid B with molecular formula C_2H_4O. Bon oxidation with acidified potassium dichromate yields C which gives effervescence with sodium bicarbonate. C when treated with $SOCl_2$ gives D. When D reacts with ethanol it gives a sweet smelling liquid E. E is also formed when C reacts with ethanol in the presence of conc. H_2SO_4.

Identify A, B, C, D and E.

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21. An aliphatic hydrocarbon A on treatment with sulphuric acid in the presence of $HgSO_4$ yields a liquid B with molecular formula C_2H_4O. Bon oxidation with acidified potassium dichromate yields C which gives effervescence with sodium bicarbonate. C when treated with $SOCl_2$ gives D. When D reacts with ethanol it gives a sweet smelling liquid E. E is also formed when C reacts with ethanol in the presence of conc. H_2SO_4.

Draw the structure of the isomer of compound B.

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22. An aliphatic hydrocarbon A on treatment with sulfuric acid in the oresence of $HgSO_4$ yields a liquid B with molecular formula C_2H_4O. B on oxidation with acidified potassium dichromate yields C which gives effervescence with sodiumn bicarbonte. C when treated with $SOCl_2$ gives D. When D reacts with ethanol, it gives a sweet smelling liquid E. E is also formed when C reacts with ethanol in the presence of conc. H_2SO_4

Write the balanced equation for the conversion of A to B.

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23. Write balanced chemical equations for the following reactions :

Oxalic acid is treated with acidified potassium permanganate solution.

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24. Write balanced chemical equations for the following reactions :

Benzoic acid is treated with a mixture of concentrated nitric acid and concentrated sulphuric acid.

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25. IUPAC name of acetaldehyde is

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26. How cam the propanoic acid be converted to ethylamine?

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27. Give one chemical test to distinguish between formic acid and acetic acid.

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28. Name the type of isomerism that the compound with molecular formula $C_3H_6O_2$ exhibits. Represent the isomers.

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29. How can the following conversion be brought about:

Acetic acid to methyl cyanide ?

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30. Give balanced equations for the following name reactions :

Kolbe's electrolytic reaction.

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31. Identify the compounds A,B and C :

(a) $C_2H_5OH \xrightarrow{PCl_5} A \xrightarrow{KCN} B \xrightarrow{H_3O^+} C_2H_5COOH \xrightarrow[\Delta]{NH_3} C$

(b) $C_6H_5COOH \xrightarrow{SOCl_2} A \xrightarrow{NH_3} B \xrightarrow{Br_2/KOH} C$

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32. Identify the compounds A, B, C :

$C_6H_5COOH \xrightarrow{SOCl_2} A \xrightarrow{NH_3} B \xrightarrow{Br_2/KOH} C$

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33. Starting with Grignard's reagent, how will you prepare propanoic acid?

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34. Write the relevant equation to convert acetic acid to acetone.

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35. Give one test to distinguish between acetone and acetic acid.

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36. Write balanced chemical equation and name the reaction: Benzoic acid is treated with soda-lime.

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37. How would you convert :

benzoic acid to benzene?

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38. How will you bring about following conversion : Formic acid to oxalic acid ?

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39. How will you convert chloroacetic acid to glycine?

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40. Arrange the following in the increasing order of acidity and explain your order.

Formic acid, acetic acid, chloroacetic acid.

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41. Conversion of Phenol into benzoic acid

Watch Video Solution

42. How will you distinguish between the following pair of compounds ? Oxalic acid and acetic acid.

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43. Draw the isomers of a compound with the molecular formula $C_4H_4O_4$

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44. Give balanced equation for the following reaction: Formic acid is heated with Tollens' reagent.

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45. Give one example of Hell-Volhard Zelinsky (HVZ) reaction.

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46. Give one good chemical test to distinguish between oxalic acid and benzoic acid.

Watch Video Solution

47. Give balanced equation for the following reaction: Benzoic acid solution is treated with sodium carbonate.

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48. Carry out the following conversions :

Methyl chloride to acetic acid.

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49. Carry out the following conversions :

Benzene to benzoic acid.

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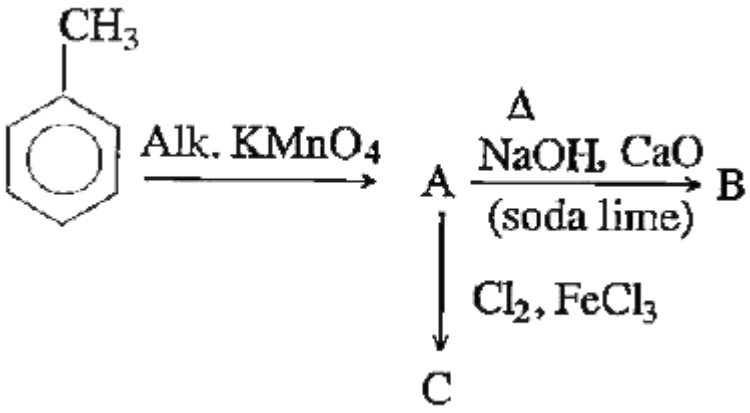

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51. Give balanced equations for the following reactions:

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52. Give one good chemical test to distinguish between urea and benzoic acid.

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53. An aliphatic hydrocarbon A on treatment with sulphuric acid in the presence of $HgSO_4$ yields a liquid B with molecular formula C_2H_4O. Bon oxidation with acidified potassium dichromate yields C which gives effervescence with sodium bicarbonate. C when treated with $SOCl_2$ gives D. When D reacts with ethanol it gives a sweet smelling liquid E. E is also formed when C reacts with ethanol in the presence of conc. H_2SO_4. Identify A, B, C, D and E.

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54. An aliphatic hydrocarbon A on treatment with sulphuric acid in the presence of $HgSO_4$ yields a liquid B with molecular formula C_2H_4O. Bon oxidation with acidified potassium dichromate yields C which gives

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Draw the structure of the isomer of compound B.

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Write the balanced equation for the conversion of A to B.

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Benzoic acid is treated with a mixture of concentrated nitric acid and concentrated sulphuric acid.

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58. Write balanced chemical equations for the following reactions :

Methyl magnesium iodide is treated with carbon dioxide and the product hydrolyzed in acidic medium.

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79. Give balanced equation for the following reaction: Benzoic acid solution is treated with sodium carbonate.

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80. An organic compund A with molecular formula $C_3H_8O_3$ reacts with oxalic acid at 110°C to give a monocarboxylic acid B. B gives a silver mirror with Tollens' reagent and reduces acidified potassium permanganate solution. Identify A and B and give the reaction of B with acidified $KMnO_4$ solution.

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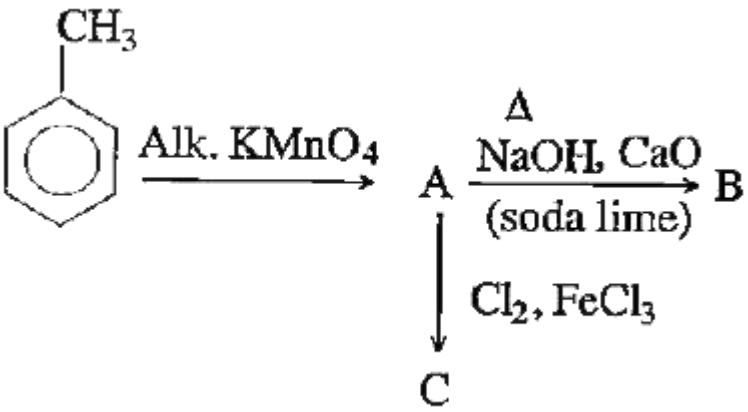

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