



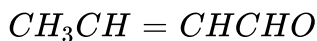
## CHEMISTRY

### BOOKS - MODERN PUBLICATION

### ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

#### Example

1. Write the IUPAC name of the following compound :



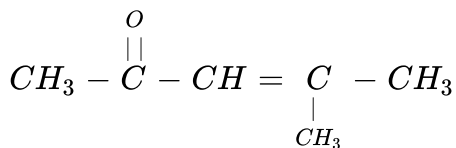
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2. Write the IUPAC name of the following compound :



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3. Write the IUPAC name of the following compound :



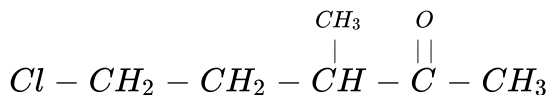
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4. Write the IUPAC name of the following compound :



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5. Write the IUPAC name of the following compound :



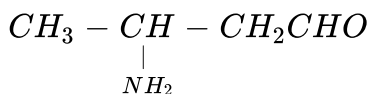
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6. Write the IUPAC name of the following compound :



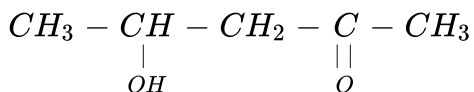
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7. Write the IUPAC name of the following compound :



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8. Write the IUPAC name of the following compound :



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9. Express 3335 in roman numbers.

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10. Express 3337 in roman numbers.

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11. Express 3338 in roman numbers.

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12. Express 3350 in roman numbers.

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13. Write the structural formula of the following : 3-Methylbutanal.

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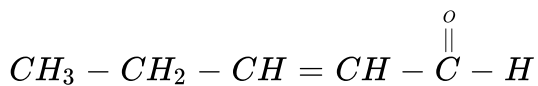
14. Express 3351 in roman numbers.

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15. Express 3352 in roman numbers.

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16. Write the IUPAC name of following compound



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17. Express 3353 in roman numbers.

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18. Give chemical equation for the following conversion : Cyclohexanol to cyclohexanone.

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19. Give chemical equation for the following conversion : But-2-ene to ethanal.

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20. Express 3373 in roman numbers.

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21. Express 3375 in roman numbers.

 [Watch Video Solution](#)

22. Give chemical equation for the following conversion : Pen-3-en-2-ol to pent-3-en-2-one.

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23. Express 3376 in roman numbers.

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24. Express 3377 in roman numbers.

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25. Express 3378 in roman numbers.

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26. Express 3380 in roman numbers.



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27. Express 3381 in roman numbers.



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28. Express 3382 in roman numbers.



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29. Express 3383 in roman numbers.



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**30.** Arrange the following carbonyl compounds in the increasing order of their reactivity in nucleophilic addition reactions : Ethanal, Propanal, Propanone, butanone .

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**31.** Arrange the following carbonyl compounds in the increasing order of their reactivity in nucleophilic addition reactions : Benzaldehyde, p-tolualdehyde, p-nitrobenzaldehyde, acetophenone.

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**32.** Would you expect benzaldehyde to be less or More reactive in nucleophilic addition reactions than propanal ? Explain.

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**33.** Complete the following statement- Gaseous exchange in the process of making food by the plants is mainly done through small openings called-

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**34.** How will you bring about the following conversion in not more than two steps ?

Propanone to propene.

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**35.** How will you bring about the following conversion in not more than two steps ?

Propanal to butanone.

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**36.** How will you bring about the following conversion in not more than two steps ?

Benzaldehyde to benzophenone .

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**37.** How will you bring about the following conversion in not more than two steps ?

Benzaldehyde to 3-Phenylpropan-1-ol.

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**38.** Choose the correct option- An animal which eats only flesh of other animals is called \_\_\_\_\_ animal.

A. Herbivorous

B. Omnivorous

C. Carnivorous

D. All of the above

**Answer:**

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**39.** How will you bring about the following conversion in not more than two steps ?

Ethanol to 3-hydroxybutanal.

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**40.** Convert the following: Ethanal to propanone.

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**41.** Convert the following: Ethanal to lactic acid.

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42. Convert the following: Ethanal to 2-hydroxy-3-butenic acid.

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43. Convert the following: Acetaldehyde to formaldehyde.

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44. Convert the following: Formaldehyde to acetaldehyde.

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45. Convert the following: Acetaldehyde to crotonic acid.

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**46.** An organic compound A with molecular formula  $C_8H_8O$  gives positive DNP and iodoform tests. It does not reduce Tollen's or Fehling's reagent and does not decolourise bromine water also. On oxidation with chromic acid ( $H_2CrO_4$ ), it gives a carboxy acid (B) with molecular formula  $C_7H_6O_2$ . Deduce the structure of A and B.

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**47.** Hydration of an alkyne to get an aldehyde or ketone is possible in the presence of

$Hg^{2+}$  ions and  $H_2SO_4$

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**48.** Hydration of an alkyne to get an aldehyde or ketone is possible in the presence of

$Hg^{2+}$  ions and  $H_2SO_4$

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49. Which of the following reacts with NaOH to produce an acid and an alcohol ?

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50. A compound 'X' ( $C_2H_4O$ ) on oxidation gives 'Y' ( $C_2H_4O_2$ ). 'X' undergoes haloform reaction. On treatment with HCN 'X' forms a product 'Z' which on hydrolysis gives 2-hydroxy propanoic acid. Write down structures of 'X' and 'Y'.

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51. A compound 'X' ( $C_2H_4O$ ) on oxidation gives 'Y' ( $C_2H_4O_2$ ). 'X' undergoes haloform reaction. On treatment with HCN 'X' forms a product 'Z' which on hydrolysis gives 2-hydroxy propanoic acid. Name the product when 'X' reacts with dil NaOH.

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52. A compound 'X' ( $C_2H_4O$ ) on oxidation gives 'Y' ( $C_2H_4O_2$ ). 'X' undergoes haloform reaction. On treatment with HCN 'X' forms a product 'Z' which on hydrolysis gives 2-hydroxy propanoic acid. Write down the equations for the reactions involved.

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53. Complete the following reaction :  $C_6H_5CHO + CH_3COCH_3 \xrightarrow{OH^-}$

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54. Complete the following reaction :  $C_6H_5COCH_3 \xrightarrow{Zn/Hg}$

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55. Complete the following reaction :  $CH_3CHO + (CH_2OH)_2 \xrightarrow{HCl}$

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56. Complete the following reaction :  $CH_3CH_2CHO \xrightarrow{OH^-}$

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57. Complete the following reaction :  $2HCHO \xrightarrow{Conc. KOH}$

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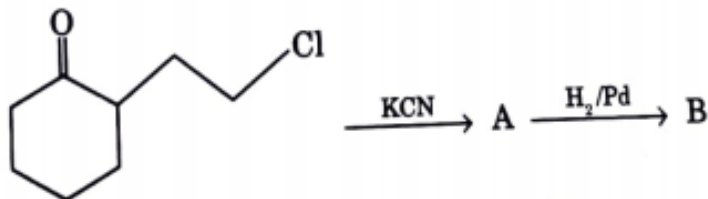
58. Complete the following reaction :  $CH_3COCl + H_2 \xrightarrow{Pd, BaSO_4}$

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59. Complete the following reaction :  $CH_3CH = CHCH_2CH_3 \xrightarrow[Zn, H_2O]{O_3}$

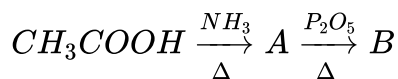
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60. Identify A and B in the following reaction.



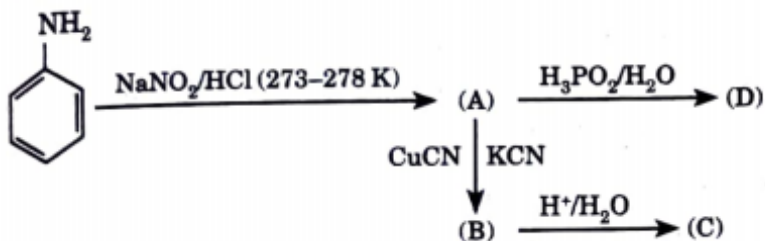
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61. Identify A, B, C, and D in the following reaction :



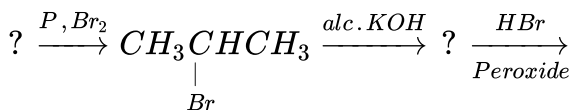
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62. Identify the compounds (A) (B), (C), (D) in the following sequence of reactions:



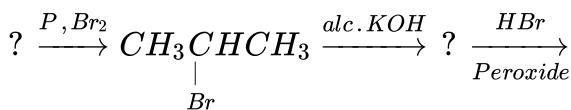
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63. Complete the following reaction (giving major product) :



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64. Complete the following reaction (giving major product) :



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65. How will you bring about the following conversion in not more than two steps ?

Benzoic acid to Benzaldehyde.

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66. How will you bring about the following conversion in not more than two steps ?

Ethylcyanide to 1- phenylpropanone.

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67. An organic compound (A) has molecular formula ( $C_5H_{10}O$ ) gave a positive 2, 4-DNP test but a negative Tollen's reagent test. It was oxidized to carboxylic acid (B) with molecular formula ( $C_3H_6O_2$ ) when treated with alkaline  $KMnO_4$  under vigorous conditions. Sodium salt of (B) gave a hydrocarbon (C) in Kolbe's electrolytic reduction. Identify (A), (B) and (C) and write the reactions involved.



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68. Draw the structure of allylic chloride.



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69. Draw the structure of 2-bromo-2-methylpropane



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70. Why do aldehydes and ketones have high dipole moments?



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71. Sodium bisulphite is used for the purification of aldehydes and ketones. Explain.



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72. In the preparation of acetaldehyde from ethyl alcohol, it is distilled out as soon as it is formed. Explain.

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73. Why oxidation of toluene with  $CrO_3$  to benzaldehyde is carried out in the presence of acetic anhydride.

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74. Aliphatic aldehydes do not show position isomers. Why?

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75. Aldehydes have lower boiling points than the corresponding alcohols. Explain.

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76. Distinguish between  $C_6H_5CH = CH - COCH_3$  and  $C_6H_5CH = CHCOCH_2CH_3$

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77. Formalin is

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78. Give the different products obtained when but-1-yne undergoes Hydroboration oxidation reaction.

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79. Give the different products obtained when but-1-yne undergoes Hydration in the presence of  $Hg^{2+}$  and  $H^+$ .



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80. Write the chemical equation for the following conversion :  
Acetaldehyde to butane-1,3-diol .



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81. Write the chemical equation for the following conversion : Acetone to propene.



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82. Arrange the following in the increasing order of their reactivity in nucleophilic addition reactions.  $CH_3CHO$ ,  $C_6H_5CHO$ ,  $HCHO$



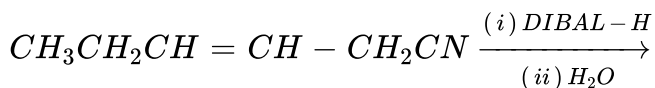
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83. Explain with the help chemical reaction: Two molecules of benzaldehyde are treated with conc. NaOH.

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84. Write the product in the following reaction:



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85. How will you convert the following ? Give chemical equation : Butan-1-ol to butanoic acid.

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86. How will you convert the following ? Give chemical equation : Cyclohexene to Hexane-1, 6-dioic acid.

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87. How will you convert the following ? Give chemical equation : Benzyl alcohol to phenyl ethanoic acid.

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88. How will you convert the following ? Give chemical equation : 4-Methyl acetophenone to benzene-1, 4-dicarboxylic acid.

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89. How will you convert the following ? Give chemical equation : 3-Nitrobromobenzene to 3-nitrobenzoic acid.

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90. How will you convert the following ? Give chemical equation : Butanal to butanoic acid.

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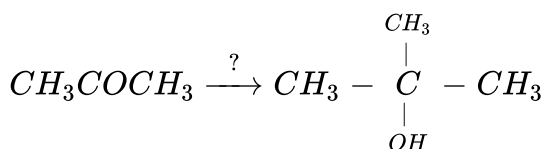
91. Complete the following statement- The food nutrient which is present in banana, orange, oats etc. and provides mainly energy is called-

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92. Explain the following statement- Carbohydrates provide energy.

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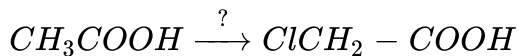
93. Name the reagents used in the following reactions :



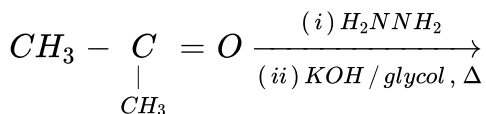
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94. Name the reagents used in the following reactions :

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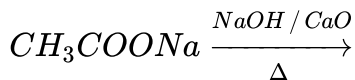
95. Predict the products of the following reaction :

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96. Predict the products of the following reaction :

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97. Predict the products of the following reaction :

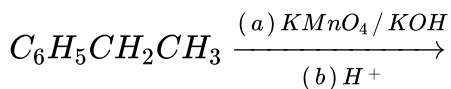


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98. Predict the products of the following reaction :  $CH_3COOH \xrightarrow{NH_3 / \Delta}$

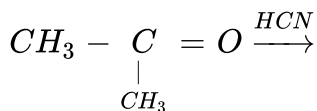
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99. Predict the products of the following reaction :



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100. Predict the products of the following reaction :



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**101.** Discuss the reactions for the preparation of benzoic acid from ethyl benzene.

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**102.** How is benzoic acid converted into aniline ?

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**103.** How is benzoic acid converted into benzoic anhydride?

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**104.** How is benzoic acid converted into aniline ?

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**105.** Describe how the following conversions are carried out : Toluene to benzoic acid .

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**106.** Describe how the following conversions are carried out : Butan-1-ol to butanoic acid.

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**107.** Describe how the following conversions are carried out : Ethylcyanide to ethanoic acid.

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**108.** Describe how the following conversions are carried out : Butan-1-ol to butanoic acid.



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109. How will you convert acetic acid to malonic acid ?

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110. How will you convert acetic acid to glycine ?

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111. How will you convert benzoic acid to aniline?

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112. Convert acetic acid into acetone

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113. How to convert acetic acid to ethylamine.

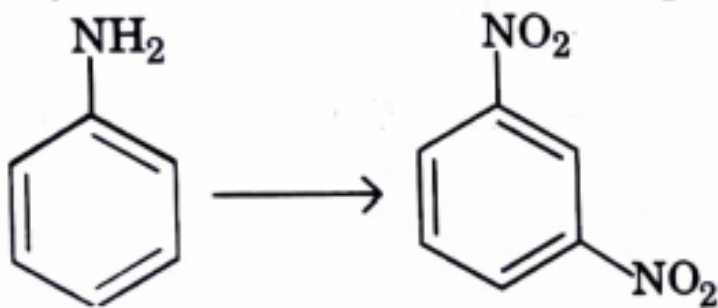
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114. How will you make the following conversion ?

Ethanoic acid to propanoic acid .

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115. How will you carry out the following conversion?



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**116.** How will you make the following conversion ?

Ethanoic acid to propanoic acid .

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**117.** How will you make the following conversion ?

Acetic acid to acetaldehyde.

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**118.** How will you make the following conversion ?

Ethanoic acid to propanoic acid .

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**119.** Draw the structure of succinic acid

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120. Write the IUPAC name of  $\text{HOOC-COOH}$ .

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121. Write the IUPAC name of  $\text{COOH} - \text{CH}_2 - \text{COOH}$ .

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122. Why are the boiling points of carboxylic acids higher than the corresponding alcohols ?

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123. Carboxylic acids do not give the characteristic reactions of carbonyl group. Explain.

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124. Formic acid can reduce: Tollen's reagent, Mercuric chloride, Potassium permanganate, All.

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125.  $Me_3CCH_2 - COOH$  is more acidic than  $Me_3SiCH_2COOH$ .

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126. Acetic acid can be halogenated in the presence of red P and  $Cl_2$  but formic acid cannot be halogenated in the same way.

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127. Draw the structure of 2-bromo-2-phenylpropane

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128. Draw the structure of 3-chlorocyclohexene

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129. Why are bond length of C = O in carboxylic acid is slightly larger than that in aldehyde and ketone ?

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130. What is glacial acetic acid ?

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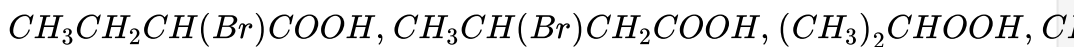
131. Suggest a method for the preparation of phenyl acetic acid using a suitable Grignard reagent.

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132. Write the structure of isobutylchloride

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133. Arrange the following compounds in increasing order of their property \_\_\_\_\_ as \_\_\_\_\_ indicated:



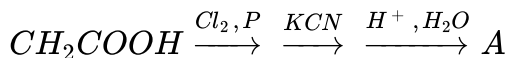
(acidic strength).

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134. Arrange the following compounds in increasing order of their property as indicated: Benzoic acid, 4- nitrobenzoic acid, 3, 4- dinitrobenzoic acid, 4-methoxy benzoic acid (acid strength)

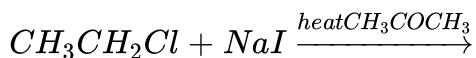
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135. Name A and B in the following reaction :



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136. Name the product in the following reaction :



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137. Draw the structure of 3-bromo-3-methylbut-1-yne

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138. Write the structure of the following compound : 3-Hydroxybutanal .

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139. Write the structure of the following compound : 2-Hydroxy-3-cyclopentylbutanal

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140. Write the structure of the following compound : 4-Oxopentanal.

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141. Write the structure of the following compound : Di-sec-butyl ketone .

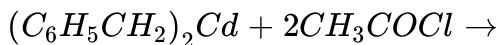
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142. Write the structure of the following compound : 4-Fluoroacetophenone.

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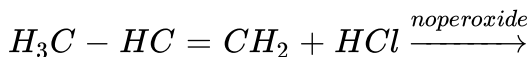


143. Write the structure of products of the following reaction :



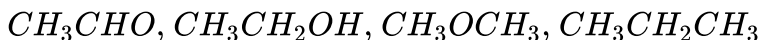
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144. Write the structure of products of the following reaction :



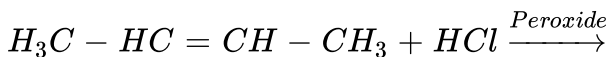
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145. Arrange the following compounds in the increasing order of their boiling points :



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146. Write the structure of products of the following reaction :





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147. Arrange the following carbonyl compounds in the increasing order of their reactivity in nucleophilic addition reactions : Benzaldehyde, p-tolualdehyde, p-nitrobenzaldehyde, acetophenone.



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148. Express 3528 in roman numbers.



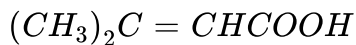
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149. Give the IUPAC name of the following compound :



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150. Give the IUPAC name of the following compound :



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151. Show how the following compound could be converted to benzoic acid : Ethylbenzene .

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152. Show how the following compound could be converted to benzoic acid : Acetophenone .

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153. Describe how the following conversions are carried out :  
Bromobenzene to benzoic acid.





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154. Show how the following compound could be converted to benzoic acid : Phenylethene (Styrene).



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

$CH_3CO_2H$  or  $CH_2FCO_2H$



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

$CH_2FCO_2H$  or  $CH_2ClCO_2H$



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

$CH_2FCH_2CH_2CO_2H$  or  $CH_3CHFCH_2CO_2H$

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158. What is meant by the following term? Give an example. Cyanohydrin .

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159. What is meant by the following term? Give an example.  
Semicarbazone .

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160. What is meant by the following term? Give an example. Hemiacetal .

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**161.** What is meant by the following term? Give an example. Ketal.

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**162.** Express 3530 in roman numbers.

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**163.** Express 3531 in roman numbers.

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**164.** Express 3532 in roman numbers.

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**165.** Express 3533 in roman numbers.



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166. Express 3535 in roman numbers.



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167. Express 3536 in roman numbers.



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168. Express 3537 in roman numbers.



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169. Express 3538 in roman numbers.



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170. Express 3550 in roman numbers.

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171. Express 3551 in roman numbers.

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172. Express 3552 in roman numbers.

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173. Express 3553 in roman numbers.

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174. Express 3555 in roman numbers.





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175. Express 3556 in roman numbers.



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176. Express 3557 in roman numbers.



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177. Express 3558 in roman numbers.



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178. Express 3560 in roman numbers.



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179. Express 3561 in roman numbers.



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180. Express 3562 in roman numbers.



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181. Express 3563 in roman numbers.



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182. Express 3565 in roman numbers.



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183. Express 3566 in roman numbers.

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**184.** Express 3567 in roman numbers.

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**185.** Express 3568 in roman numbers.

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**186.** Express 3570 in roman numbers.

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**187.** Express 3571 in roman numbers.

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188. Express 3572 in roman numbers.

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189. Express 3573 in roman numbers.

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190. Draw structure of the following derivative :  
Acetaldehydedimethylacetal .

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191. Draw structure of the following derivative : The semicarbazone of  
cyclobutanone.

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192. Express 3575 in roman numbers.

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193. Draw structure of the following derivative : The methyl hemiacetal of formaldehyde.

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194. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagent :  $\text{PhMgBr}$  and then  $\text{H}_3\text{O}^+$  .

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195. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagent : Tollen's reagent.

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**196.** Predict the product formed when cyclohexanecarbaldehyde reacts with following reagent : Semicarbazide and weak acid.

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**197.** Predict the product formed when cyclohexanecarbaldehyde reacts with following reagent : Excess ethanol and acid.

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**198.** Predict the product formed when cyclohexanecarbaldehyde reacts with following reagent : Zinc amalgam and dilute hydrochloric acid.

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**199.** Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write

the structures of the expected products of aldol condensation and Cannizzaro's reaction : Methanal .

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**200.** Which of the following compounds would 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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**201.** Which of the following compounds would 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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**202.** Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Benzophenone .

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**203.** Which of the following compounds would 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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**204.** Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : 1-Phenyl propanone.

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**205.** Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Phenyl acetaldehyde.

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**206.** Which of the following compounds would 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.

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**207.** Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : 2, 2-Dimethyl butanal.

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**208.** How will you convert ethanal into the following compound ?

Butane-1,3-diol.

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**209.** How will you convert ethanal into the following compound ?

But-2-enal.

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**210.** How will you convert ethanal into the following compound ?

But-2-enoic acid.

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**211.** Write structural formulas and names of the four possible aldol condensation products from propanal and butanal. In each case, indicate which aldehyde served as nucleophile and which as electrophile.

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212. Arrange the following compounds in increasing order of their property as indicated: Acetaldehyde, acetone, di tert-butyl ketone, tert-butylmethyl ketone (reactivity towards HCN)

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213. Arrange the following compounds in increasing order of their property as indicated:

$CH_3CH_2CH(Br)COOH$ ,  $CH_3CH(Br)CH_2COOH$ ,  $(CH_3)_2CHOOH$ ,  $ClCH_2COOH$

(acidic strength).

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214. Arrange the following compounds in increasing order of their property as indicated: Benzoic acid, 4- nitrobenzoic acid, 3, 4- dinitrobenzoic acid, 4-methoxy benzoic acid (acid strength)

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**215.** Give simple chemical tests to distinguish between the following pairs of compounds: Propanal and propanone.

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**216.** Give simple chemical tests to distinguish between the following pairs of compounds.

Acetophenone and Benzophenone

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**217.** Give simple chemical tests to distinguish between the following pairs of compounds

Phenol and Benzoic acid

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**218.** Give simple chemical tests to distinguish between the following pairs of compounds: Benzoic acid and Ethyl benzoate.

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**219.** Express 3608 in roman numbers.

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**220.** Give simple chemical tests to distinguish between the following pairs of compounds: Benzaldehyde and Acetophenone.

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**221.** Give simple chemical tests to distinguish between the following pairs of compounds.

Ethanal and Propanal





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**222.** How will you prepare the following compound from benzene ? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.

Methyl benzoate.



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**223.** How will you prepare the following compound from benzene ? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.

m-Nitrobenzoic acid.



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**224.** How will you prepare the following compound from benzene ? You may use any inorganic reagent and any organic reagent having not more

than one carbon atom.

p-Nitrobenzoic acid.

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**225.** How will you prepare the following compound from benzene ? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.

Phenylacetic acid .

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**226.** How will you prepare the following compound from benzene ? You may use any inorganic reagent and any organic reagent having not more than one carbon atom.

p-Nitrobenzaldehyde.

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**227.** How will you bring about the following conversion in not more than two steps ?

Propanone to propene.



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**228.** How will you bring about the following conversion in not more than two steps ?

Benzoic acid to Benzaldehyde.



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**229.** Express 3610 in roman numbers.



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**230.** How will you bring about the following conversion in not more than two steps ?

Benzene to m-Nitroacetophenone.

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**231.** How will you bring about the following conversion in not more than two steps ?

Benzaldehyde to benzophenone .

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**232.** How will you bring about the following conversion in not more than two steps ?

Bromobenzene to 1-Phenylethanol.

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**233.** How will you bring about the following conversion in not more than two steps ?

Benzaldehyde to 3-Phenylpropan-1-ol.

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**234.** How will you bring about the following conversion in not more than two steps ?

Benzaldehyde to o-hydroxyphenylacetic acid.

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**235.** Describe the following : Acetylation .

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**236.** Write Cannizzaro reaction.

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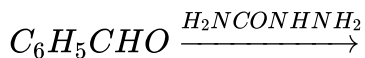
237. Write cross aldol condensation.

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238. Define the following terms: decarboxylation

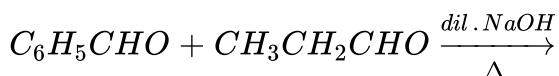
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239. Complete synthesis by giving missing starting material, reagent or products



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240. Complete synthesis by giving missing starting material, reagent or products



 [Watch Video Solution](#)

**241.** Complete synthesis by giving missing starting material, reagent or products



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**242.** Give plausible explanation for of the following : Cyclohexanone forms cyanohydrin in good yield but 2,2,6-trimethylcyclohexanone does not.

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**243.** Give plausible explanation for of the following : There are two  $-NH_2$  groups in semicarbazide. However, only one is involved in the formation of semicarbazones.

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**244.** Give plausible explanation for of the following : During the preparation of esters from a carboxylic acid and an alcohol in the presence of an acid catalyst, the water or the ester should be removed as soon as it is formed.

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**245.** Express 3576 in roman numbers.

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**246.** Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is a strong acid than phenol. Why ?

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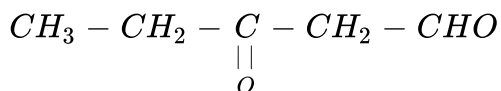
247. Why is there a large difference in the boiling points of butanal and butan-1-ol?

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248. Give one chemical test of distinguish between Pentanone-2 and Pentanone-3.

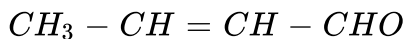
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249. Give the IUPAC name of the following compound :



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250. Give the IUPAC name of the following compound :





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251. Give the structure of the following compound : 4-Nitropropiophenone.



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252. Give the structure of the following compound : 2-Hydroxycyclopentanecarbaldehyde.



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253. Give the structure of the following compound : Phenyl acetaldehyde.



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254. Write IUPAC name of the following structure : 
$$\begin{array}{c} CHO \\ | \\ CHO \end{array}$$





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**255.** Benzaldehyde can be obtained from benzal chloride. Write reactions for obtaining benzalchloride and then benzaldehyde from it.



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**256.** Name the electrophile produced in the reaction of benzene with benzoyl chloride in the presence of anhydrous  $AlCl_3$ . Name the reaction also.



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**257.** Express 3577 in roman numbers.



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**258.** Arrange the following in decreasing order of their acidic strength and give reason for your answer.  $\text{CH}_3\text{CH}_2\text{OH}$ ,  $\text{CH}_3\text{COOH}$ ,  $\text{ClCH}_2\text{COOH}$ ,  $\text{FCH}_2\text{COOH}$

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**259.** What product will be formed on reaction of propanal with 2-methylpropanal in the presence of  $\text{NaOH}$ ? What products will be formed? Write the name of the reaction also.

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**260.** Compound 'A' was prepared by oxidation of compound 'B' with alkaline  $\text{KMnO}_4$ . Compound 'A' on reduction with lithium aluminium hydride gets converted back to compound 'B'. When compound 'A' is heated with compound B in the presence of  $\text{H}_2\text{SO}_4$  it produces fruity smell of compound C to which family the compounds 'A', 'B' and 'C' belong to?



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261. Express 3637 in roman numbers.



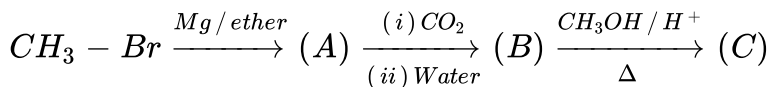
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262. Carboxylic acids contain carbonyl group but do not show the nucleophilic addition reaction like aldehydes or ketones. Why .



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263. Identify the compounds A, B and C in the following reaction.

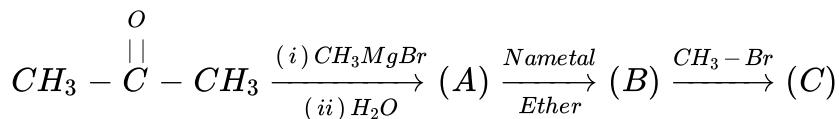


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264. Why carboxylic acids are more acidic than Phenols ?

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265. Complete the following reaction sequence.



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266. Complete the following statement- Vitamin A is required by the body to-

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267. Can Gatterman-Koch reaction be considered similar to Friedel Craft's acylation? Discuss.

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268. Halogens are highly reactive. Explain.

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269. Why is an amide more acidic than amine ?

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270. Di-tert-butylketone does not give precipitate with  $NaHSO_3$  whereas acetone does. Explain.

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271. Which of the following is not used for the preparation of ketone ?

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**272.** What is the function of Rochelle salt in Fehling's solution ?

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**273.** Aldehydes usually donot form stable hydrates but chloral normally exists as chloral hydrate. Explain.

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**274.** Why water cannot be separated completely from ethanol by fractional distillation?

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275. Identify A, B, C and D in the following reaction :



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276. Draw structure of m-cresol

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277. Draw structure of p-cresol

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278. Draw structure of catechol

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**279.** Explain the fact that the C-O bond length in RCOOH is shorter than in ROH.

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**280.** Highly branched carboxylic acids are less acidic than unbranched acids. Why ?

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**281.** Although p-hydroxy benzoic acid is less acidic than benzoic acid, ortho hydroxy benzoic acid (salicylic acid) is about 15 times more acidic than benzoic acid. Explain.

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**282.** Draw structure of resorcinol





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283. Draw structure of quinol



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284. Draw structure of pyrogallol



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285. Draw structure of primary allyl alcohol



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286. Draw structures of 3-bromo-5-chloro-3,5-dimethylheptane



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287. Draw structures of 1-bromo-2,2-dimethylpropane

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## Exercise

1. Express 3355 in roman numbers.

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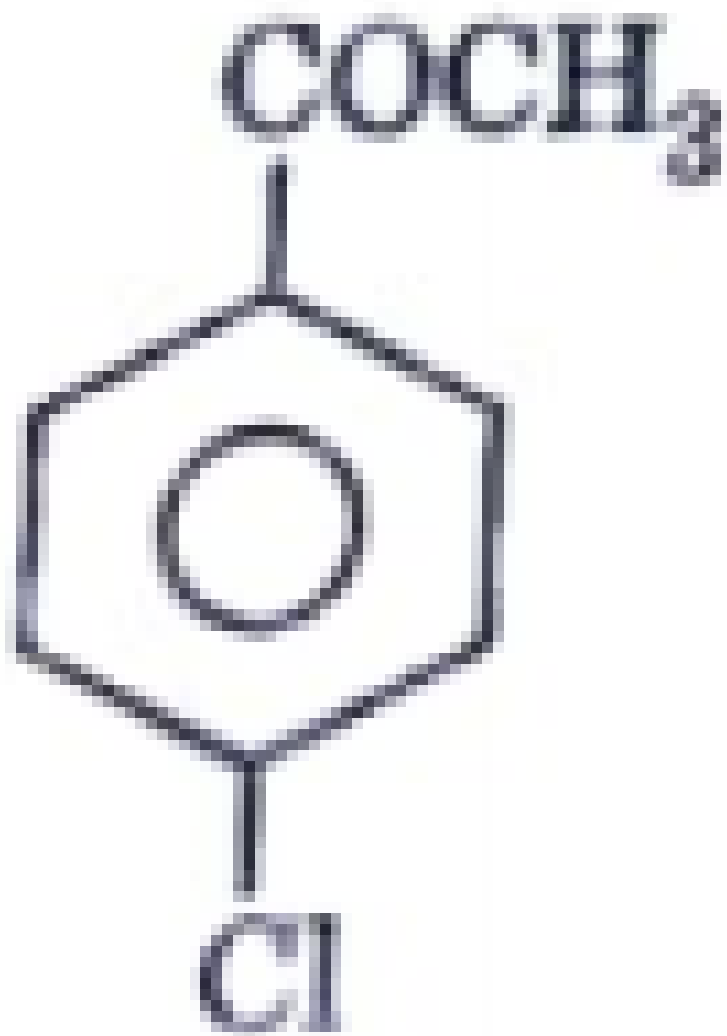
2. Express 3356 in roman numbers.

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3. Give IUPAC name of the following :  $(CH_3)_2CHCOCH_3$

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4. Give IUPAC name of the following :

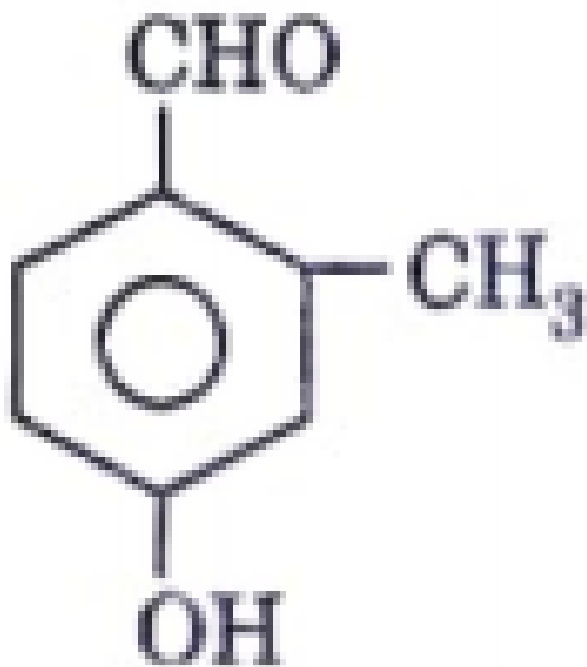


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5. Express 3357 in roman numbers.

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6. Give IUPAC name of the following :

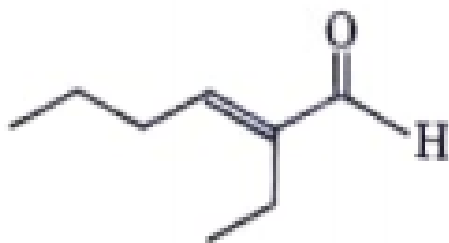


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7. Express 3358 in roman numbers.

[▶ Watch Video Solution](#)

8. Give IUPAC name of the following :



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9. Express 3360 in roman numbers.

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10. Express 3366 in roman numbers.

[Watch Video Solution](#)

11. Express 3367 in roman numbers.

[Watch Video Solution](#)

12. Express 3361 in roman numbers.

[Watch Video Solution](#)

13. Express 3362 in roman numbers.

[Watch Video Solution](#)

14. Express 3363 in roman numbers.

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15. Express 3365 in roman numbers.

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16. Give the formula of metamer of  $CH_3CH_2COCH_2CH_3$

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17. Write the structural formula of the following : 3-Methylbutanal.

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18. Draw the structure of the following compound : 4-Chloropentan-2-one.

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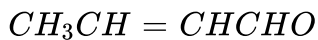
19. Express 3368 in roman numbers.

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20. Draw the structure of the following compound : p-Methyl benzaldehyde.

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21. Write the IUPAC name of the following compound :



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22. Express 3370 in roman numbers.

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23. Express 3371 in roman numbers.

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24. Express 3372 in roman numbers.

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25. Name the following compound according to IUPAC system of nomenclature :  $CH_3CH_2COCH(C_2H_5)CH_2CH_2Cl$

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26. Express 3385 in roman numbers.

 [Watch Video Solution](#)

27. Express 3386 in roman numbers.

 [Watch Video Solution](#)

28. Express 3387 in roman numbers.

 [Watch Video Solution](#)

29. Express 3388 in roman numbers.

 [Watch Video Solution](#)

30. Express 3500 in roman numbers.

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31. Express 3501 in roman numbers.



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32. Express 3502 in roman numbers.



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33. Explain the following statement- Sunlight is the key component of photosynthesis.



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34. How the gases are exchanged during the process of photosynthesis?



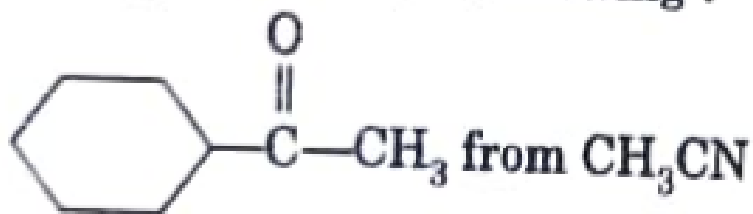
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35. Complete the following reaction :  $CH_3CH = CHCH_2CH_3 \xrightarrow[Zn, H_2O]{O_3}$



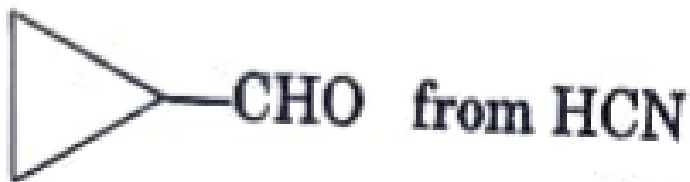
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36. How will you obtain the following ?



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37. How will you obtain the following ?



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38. Draw the structure of 4-bromopent-2-ene



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39. Express 3503 in roman numbers.



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40. Complete the following statement- The nutrient which is the energy source for the body is called-



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41. Express 3505 in roman numbers.



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42. Express 3506 in roman numbers.



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43. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Methanal .

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44. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Benzophenone .

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45. Which of the following compounds would 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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46. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Methanal .

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47. Which of the following compounds would 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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48. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Butan-1-ol.

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49. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Phenyl acetaldehyde.

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50. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write



the structures of the expected products of aldol condensation and Cannizzaro's reaction : 1-Phenyl propanone.

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51. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : Methanal .

 [Watch Video Solution](#)

52. Which of the following compounds would undergo aldol condensation, which the Cannizzaro's reaction and which neither ? Write the structures of the expected products of aldol condensation and Cannizzaro's reaction : 2, 2-Dimethyl butanal.

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**53.** Write the name and structure of the product formed by the following reaction : Addition of HCN to acetone.

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**54.** Write the name and structure of the product formed by the following reaction : Reaction of semicarbazide with formaldehyde.

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**55.** Write the name and structure of the product formed by the following reaction : Addition of Grignard reagent to butanone.

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**56.** Write the name and structure of the product formed by the following reaction : Reaction of acetophenone with hydrazine in strong base.

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57. Write the name and structure of the product formed by the following reaction : Reaction of  $PCl_5$  and propanone.

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58. What is the order of reactivity of the following towards HCN ?

(i)  $C_6H_5CHO$  (ii)  $C_6H_5COC_6H_5$  (iii)  $CH_3CHO$  (iv)  $HCHO$  .

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59. Predict the product of reaction of acetone with aniline.

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60. Predict the product of reaction of  $RCHO$  with hydrazine in the presence of  $KOH$ .



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61. Predict the product of reaction of formaldehyde with ammonia .



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62. Predict the product of reaction of butanone with  $LiAlH_4$ .



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63. Predict the product of reaction of aldehyde with Tollen's reagent.



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64. Predict the product of reaction of acetone with  $KMnO_4$ .



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65. What Grignard reagent would use to make following conversion ?

Acetophenone to 2-phenyl-2-butanol.

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66. What Grignard reagent would use to make following conversion ?

Cyclohexanone to 1-propyl cyclohexanol.

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67. What Grignard reagent would use to make following conversion ?

Formaldehyde to benzyl alcohol.

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68. What are A and B in the following reaction :



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69. Express 3507 in roman numbers.

[▶ Watch Video Solution](#)

70. Express 3508 in roman numbers.

[▶ Watch Video Solution](#)

71. Express 3510 in roman numbers.

[▶ Watch Video Solution](#)

72. Express 3511 in roman numbers.

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73. Express 3512 in roman numbers.

 [Watch Video Solution](#)

74. Write the IUPAC name of the following :  $CH_3CH = CHCOOH$

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75. Write the IUPAC name of the following :  $CHCH_2CH_2CH_2COOH$

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76. Write the IUPAC name of the following :  $C_6H_5CH_2CH_2COOH$



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77. Write the IUPAC name of the following :  $(CH_3)_3CCOOH$



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78. Write the IUPAC name of the following :  $CH_3CH_2COCH_2COOH$



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79. Write the IUPAC name of the following :  $(CH_3)_3CCH_2COOH$



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80. Write the IUPAC name of the following :  $CH_3 - \underset{\substack{| \\ OH}}{CH} - CH_2COOH$



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81. Give the structure of the following : Phenyl acetic acid.

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82. Give the structure of the following : Trimethyl acetic acid.

 [Watch Video Solution](#)

83. Give the structure of the following : Iso-valeric acid.

 [Watch Video Solution](#)

84. Give the structure of the following : Malonic acid.

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85. Give the structure of the following : Adipic acid.



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**86.** Write the IUPAC name of the following acid whose common name is given : Isobutyric acid.



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**87.** Write the IUPAC name of the following acid whose common name is given : n-Valeric acid.



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**88.** Write the IUPAC name of the following acid whose common name is given : Succinic acid .



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**89.** Write the IUPAC name of the following acid whose common name is given : Phenyl acetic acid.

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**90.** Write the IUPAC name of the following acid whose common name is given : Malonic acid.

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**91.** Write the functional isomers of propanoic acid.

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**92.** Draw the structure of the following : 3-Bromo-4-phenyl pentanoic acid.

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93. Draw the structure of the following : Hex-2-en-4-ynoic acid .

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94. Write equation for the preparation of benzoic acid from the following compound : benzyl alcohol.

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95. Write equation for the preparation of benzoic acid from the following compound : toluene.

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96. Write equation for the preparation of benzoic acid from the following compound : benzonitrile .

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97. Write equation for the preparation of benzoic acid from the following compound : ethyl benzene.

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98. Write equation for the preparation of benzoic acid from the following compound : benzo trichloride.

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99. How will you prepare acetic acid from acetylene ?

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100. How will you prepare butanoic acid from 1-propanol.

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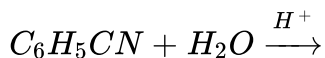
101. How will you prepare benzoic acid from aniline.

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102. How will you prepare ethanoic acid from carbon dioxide.

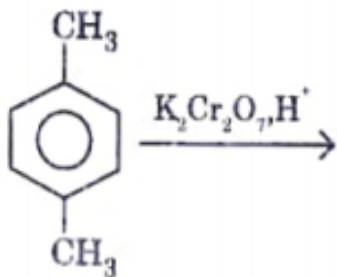
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103. Complete the following reaction indicating the major product formed



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104. Complete the following reaction indicating the major product formed



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105. Express 3513 in roman numbers.

[▶ Watch Video Solution](#)

106. Express 3515 in roman numbers.

[▶ Watch Video Solution](#)

107. Express 3516 in roman numbers.

[▶ Watch Video Solution](#)

108. Express 3517 in roman numbers.

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109. Express 3518 in roman numbers.

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110. How will you prepare ethyl bromide from propionic acid.

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111. Express 3520 in roman numbers.

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112. Express 3521 in roman numbers.

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113. How will you prepare m-nitrobenzoic acid from benzoic acid.

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114. Express 3522 in roman numbers.

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115. Express 3523 in roman numbers.

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116. Express 3525 in roman numbers.



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117. Express 3526 in roman numbers.



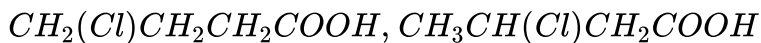
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118. Express 3527 in roman numbers.



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119. Which of the following is a stronger acid of the following pairs ?

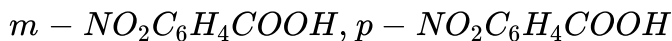


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120. Complete the following statement- The nutrient which act as a fuel for different parts of the body is called-

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121. Which of the following is a stronger acid of the following pairs ?

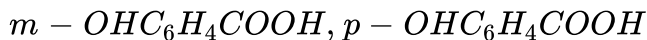


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122. Complete the following statement- The two food sources in which carbohydrate is present are-

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123. Which of the following is a stronger acid of the following pairs ?



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**124.** Complete the following statement- The food nutrient whose main motive is to provide energy to the body is-

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**125.** Aldehydes and ketones react with electrophiles but not with nucleophiles.

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**126.** Express 3578 in roman numbers.

 [Watch Video Solution](#)

**127.** Acetaldehyde can be prepared by dry distillation of calcium acetate.

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128. Acetaldehyde can be reduced to ethane in the presence of  $LiAlH_4$

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129. Benzaldehyde cannot undergo Cannizzaro Reaction.

 [Watch Video Solution](#)

130. Aldehydes are easily oxidised than ketones.

 [Watch Video Solution](#)

131. True or False : Acetaldehyde cyanohydrin on hydrolysis gives lactic acid.

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**132.** Benzaldehyde reduces Fehling Solution.

 [Watch Video Solution](#)

**133.** Benzaldehyde forms addition product with sodium bisulphite but acetophenone does not.

 [Watch Video Solution](#)

**134.** ketones give nucleophilic addition reactions more readily.

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**135.** Calcium formate on heating gives acetaldehyde.

 [Watch Video Solution](#)

136. The  $pK_a$  Value of formic acid is smaller than that of acetic acid.

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137. The carbon-oxygen bond lengths in formic acid are equal.

 [Watch Video Solution](#)

138. True or False : Nitration of benzoic acid gives m-nitrobenzoic acid.

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139. Write the name of the product  $CH_3CH_2OH + SOCl_2 \xrightarrow{\text{pyridine}}$

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140. When benzoic acid is heated with soda lime, benzene is formed.



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141. True or False : Acetate ion is a stronger base than methoxide ion.



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142. True or False : Ethanoic acid liberates hydrogen with sodium metal.



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143.  $Me_3CCH_2 - COOH$  is more acidic than  $Me_3SiCH_2COOH$ .



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144. Formic acid gives Silver mirror test Tollen's reagent.



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145. Complete the missing links : Aldehydes form red precipitate with Fehling solution of .....

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146. In carbonyl compounds the carbon atom involves ..... hybridisation.

 [Watch Video Solution](#)

147. Express 3580 in roman numbers.

 [Watch Video Solution](#)

148. Write the name of the product  $CH_3 \overset{OH}{\underset{|}{C}} HCH_3 + PCl_3 \rightarrow$

 [Watch Video Solution](#)

149. Express 3581 in roman numbers.

 [Watch Video Solution](#)

150. Three moles of acetone on refluxing with conc.  $H_2SO_4$  give .....

 [Watch Video Solution](#)

151. Acetone reacts with hydroxylamine to form .....

 [Watch Video Solution](#)

152. Write the name of the product  $CH_3CH_2CH_2Br + Hg_2F_2 \xrightarrow{\quad}$

 [Watch Video Solution](#)

153. Express 3582 in roman numbers.



[Watch Video Solution](#)

154. Express 3583 in roman numbers.



[Watch Video Solution](#)

155. Express 3585 in roman numbers.



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156. Express 3586 in roman numbers.



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157. Express 3587 in roman numbers.

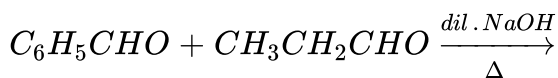


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158.  $(\text{CH}_3)_2\text{CO} + \text{NaHSO}_3$  .....

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159. Complete synthesis by giving missing starting material, reagent or products



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160. Carboxylic acids may be prepared by reacting Grignard reagents with

.....

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161. Kolbe's electrolysis of potassium succinate gives carbon dioxide and

.....



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162. .... is produced on heating ammonium acetate.

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163. Draw the structure of methyl acetate

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164. Write the products of partial hydrolysis of cyanobenzene.

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165. Write the products of complete hydrolysis of cyanobenzene.

 [Watch Video Solution](#)

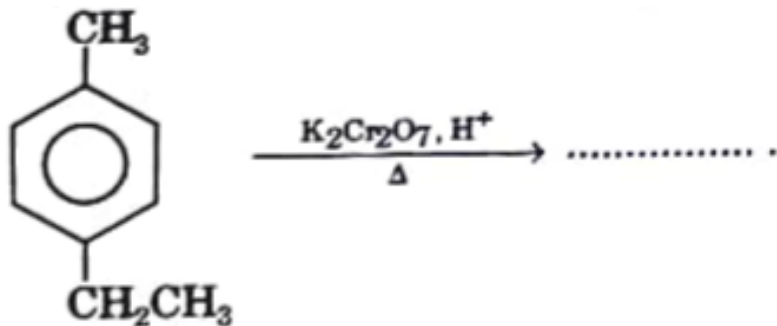
166. Write the products of reduction of cyanobenzene.

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167. Draw structure of o-bromophenol.

 [Watch Video Solution](#)

168.



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169. Draw structure of o- cresol

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170. Benzoyl chloride reduction with hydrogen in the presence of Pd and  $BaSO_4$  give acetophenone/benzaldehyde .

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171. The boiling point of propanone is higher/lower than that of propanal.

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172. Why do aldehydes and ketones undergo nucleophilic addition reaction?

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173. Acetaldehyde reacts with DNP to give orange/black precipitate.

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174. Nitrobenzene on electrolytic reduction in strongly acidic medium gives

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175. The red brown precipitate of aldehydes with Fehling solution is due to formation of  $Cu_2O/CuO$ .

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176. Iodoform test is not given by :

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177. Aldehydes or ketones are reduced to alkanes/alcohols with  $NaBH_4$ .







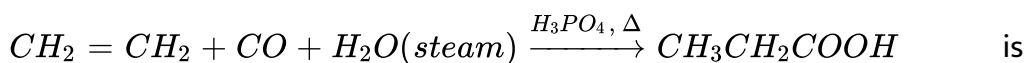
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178. When Phenol is react with  $CCl_4$  in place of  $CHCl_3$  in the reaction, the product formed is



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179. The reaction :



known as ?.



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180. During the reaction of carboxylic acid with  $Na_2CO_3$  the carbon dioxide evolved comes from  $Na_2CO_3$ /carboxylic acid.



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**181.** Ethanoic acid is weaker acid than benzoic acid. Why ?

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**182.** Carboxylic acids are reduced to alkanes /alcohols with HI, red P.

 [Watch Video Solution](#)

**183.** When calcium acetate is distilled, it gives acetone/ acetaldehyde.

 [Watch Video Solution](#)

**184.** Formic acid gives Silver mirror test Tollen's reagent.

 [Watch Video Solution](#)

**185.** How benzoic acid is prepared from toluene ?



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**186.** Water is more acidic than alcohol



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**187.** Why are the boiling points of carboxylic acids higher than the corresponding alcohols ?



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**188.** Chloroacetic acid reacts with KCN followed by acidic hydrolysis to give malonic acid/ lactic acid.



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189. Arrange the following in order of their increasing reactivity towards

HCN :  $CH_3CHO$ ,  $CH_3COCH_3$ ,  $HCHO$ ,  $C_2H_5COCH_3$

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190. What is the hybridised state of carbonyl carbon atom?

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191. Give one chemical test of distinguish between Pentanone-2 and Pentanone-3.

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192. Give the structure and IUPAC name of an aliphatic aldehyde having five carbon atoms which undergoes Cannizzaro's reaction.

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193. Name the product obtained when acetone is reduced with  $LiAlH_4$ .

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194. What happens when benzophenone is reduced with  $Zn(Hg)$  in the presence of  $HCl$ ?

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

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196. Draw the structure of 3-methylbutanal.

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197. Arrange the following carbonyl compounds in the increasing order of their reactivity in nucleophilic addition reactions : Ethanal, Propanal, Propanone, butanone .

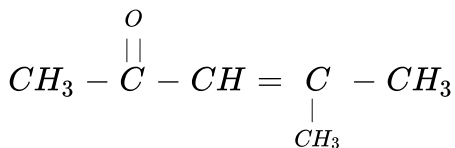
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198. Arrange the following in the increasing order of their reactivity in nucleophilic addition reactions.



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199. Write the IUPAC name of the following compound :



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200. Write the IUPAC name of



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201. Express 3588 in roman numbers.

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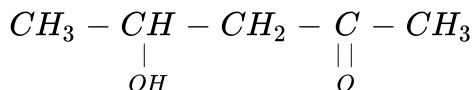
202. Express 3600 in roman numbers.

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203. Express 3601 in roman numbers.

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204. Write the IUPAC name of the following compound :



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205. Express 3605 in roman numbers.

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**206.** Write a chemical test to distinguish between phenol and benzoic acid.

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**207.** Express 3602 in roman numbers.

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**208.** Express 3603 in roman numbers.

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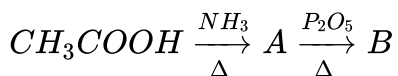
**209.** Give the IUPAC name of  $\text{HOOCCH} = \text{CHCOOH}$

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210. Express 3607 in roman numbers.

 [Watch Video Solution](#)

211. Identify A, B, C, and D in the following reaction :



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212. Express 3606 in roman numbers.

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213. Write the IUPAC name of  $HOOC - CH_2 - \overset{COOH}{\underset{|}{CH}} - CH_2 - COOH$

 [Watch Video Solution](#)

214. Express 3611 in roman numbers.



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215. Express 3612 in roman numbers.



[Watch Video Solution](#)

216. Express 3613 in roman numbers.



[Watch Video Solution](#)

217. Express 3615 in roman numbers.



[Watch Video Solution](#)

218. Express 3625 in roman numbers.



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219. Write the IUPAC name of  $CH_3COCH_2COCH_3$

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220. Write the structure of 3-oxopentanal.

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221. Write the structural formula of 1-phenylpentan-2-one.

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222. Express 3616 in roman numbers.

[Watch Video Solution](#)

223. Express 3617 in roman numbers.



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224. Express 3618 in roman numbers.



[Watch Video Solution](#)

225. Express 3620 in roman numbers.



[Watch Video Solution](#)

226. Express 3621 in roman numbers.



[Watch Video Solution](#)

227. Express 3622 in roman numbers.



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228. Express 3623 in roman numbers.

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229. Express 3626 in roman numbers.

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230. Express 3631 in roman numbers.

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231. Write the IUPAC name of  $CH_3CH_2 - \overset{O}{\parallel}C - CH_2 - \overset{O}{\parallel}C - H$  is

A. 1-oxopentanal-3-one

B. 1-oxopentanal

C. 3-oxopentanal

D. 3-oxopentanal-3-ane

**Answer:**

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**232.** Express 3627 in roman numbers.

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**233.** Express 3628 in roman numbers.

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**234.** Complete the following statement- The vitamin which is required for good eyesight, healthy bones and tissues and healthy embryonic

development is called-

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235. Express 3630 in roman numbers.

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236.  $RCOOH \xrightarrow{LiAlH_4 / Ether} A$ , A is

A.  $RCH_2OH$

B.  $RCH_3$

C. RCHO

D. ROR

**Answer:**

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**237.** Which vitamin is also called as retinol?

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**238.** Express 3632 in roman numbers.

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**239.** Which vitamin produces a protein rhodopsin in the eye?

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**240.** Express 3633 in roman numbers.

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**241.** Express 3635 in roman numbers.



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**242.** Express 3636 in roman numbers.



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**243.** The vitamin present in carrot, tomato, broccoli and spinach is-



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**244.** Complete the following statement- Vitamin A is found in-



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**245.** Answer the following question in one word- Which vitamin help to maintain good skin, immune system and also called as retinol?



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**246.** Describe the following reaction : Cannizzaro's reaction.

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**247.** Express 3638 in roman numbers.

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**248.** Express 3650 in roman numbers.

 [Watch Video Solution](#)

**249.** Explain:

Cannizzaro's reaction.

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**250.** Illustrate the following named reaction by giving example :

Clemmensen reduction.

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**251.** Express 3651 in roman numbers.

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**252.** Express 3652 in roman numbers.

 [Watch Video Solution](#)

**253.** Complete the following statement- Vitamin A is the component of a protein produced in the eye which allows the eye to see in the low light.

The name of the protein is-

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**254.** Express 3653 in roman numbers.

 [Watch Video Solution](#)

**255.** Express 3655 in roman numbers.

 [Watch Video Solution](#)

**256.** Complete the following statement- The food sources in which vitamin A is present are-

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**257.** Express 3656 in roman numbers.

 [Watch Video Solution](#)

**258.** Express 3657 in roman numbers.

 [Watch Video Solution](#)

**259.** Express 3658 in roman numbers.

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**260.** Why do aldehydes and ketones undergo nucleophilic addition reaction?

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**261.** Aldehydes have lower boiling points than the corresponding alcohols. Explain.

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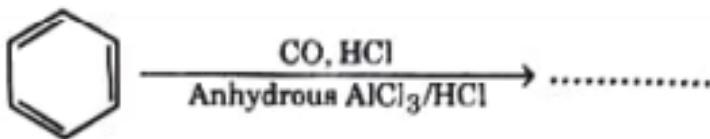
262. Why do aldehydes and ketones have high dipole moments?

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263. Fill in the blank with appropriate answer- \_\_\_\_\_ is the vitamin which produces a protein in the eye which allows eye to see in low light.

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264. Complete the reaction:



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265. What happens when carbonyl compounds are treated with hydrazine ? Write the reaction.

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**266.** Give a chemical test with equation to distinguish between methanal and ethanal.

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**267.** Name the following- The vitamin which is important for eyes.

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**268.** What happens when carbonyl compound is treated with zinc amalgam and concentrated hydrochloric acid? Give chemical equation. What is the name of the reaction?

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**269.** Complete the following statement Vitamin A is called retinol because-

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**270.** Write short notes on the following: Aldol condensation.

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**271.** Write short notes on the following: Cannizzaro's reaction .

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**272.** Express 3708 in roman numbers.

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273. Distinguish between formic acid and acetic acid.

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274. Give the formula of A, B  $CH_3COOH \xrightarrow{LiAlH_4} A \xrightarrow{Cu / 573K} B$

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275. Complete the following statement- Vitamin A is also called as-

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276. Why are the boiling points of carboxylic acids higher than the corresponding alcohols ?

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277. Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is a strong acid than phenol. Why?

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278. Arrange the following in increasing order of acid strength :

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

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279. Write chemical reactions to affect the following transformation :

Butan-1-ol to butanoic acid.

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**280.** Write chemical reactions to affect the following transformation :

Benzyl alcohol to phenyl ethanoic acid.

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**281.** Write chemical reactions to affect the following transformation :

Benzamide to benzoic acid.

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**282.** How will you convert benzoic acid to benzaldehyde?

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**283.** How will you convert benzoic acid to ethyl benzoate ?

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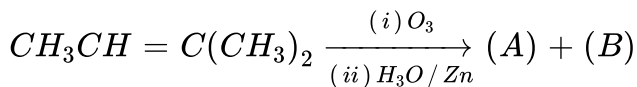
284. Write a short note on H.V.Z. reaction.

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285. Why are the boiling points of carboxylic acids higher than the corresponding alcohols ?

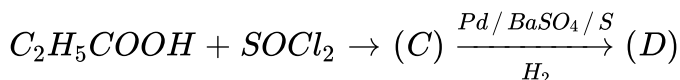
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286. Identify compounds (A) to(D) in the following reactions:



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287. Identify compounds (A) to(D) in the following reactions:



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**288.** Write esterification reaction.

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**289.** Write Schotten Baumann reaction.

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**290.** Explain the following reactions :

Kolbe's reaction.

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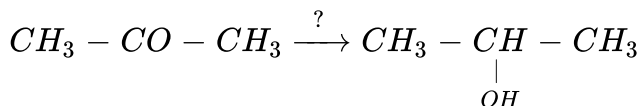
**291.** Write a chemical test to distinguish between Acetic acid and Acetone.

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292. Distinguish between formic acid and acetic acid.

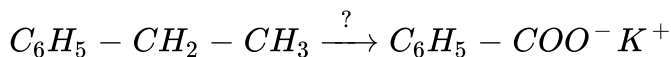
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293. Name the reagents used in the following reaction :



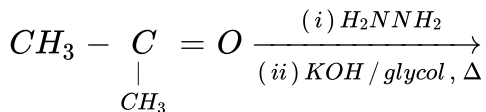
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294. Name the reagents used in the following reaction :



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295. Predict the products of the following reaction :



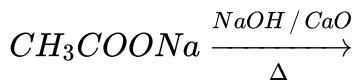
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296. Predict the products of the following reaction :



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297. Predict the products of the following reaction :



 [Watch Video Solution](#)

298. Write short notes on the following: Cannizzaro's reaction .

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299. Write short notes on the following: Rosenmund reduction.

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**300.** Write short notes on the following: Friedel Crafts acylation.

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**301.** Give simple chemical tests to distinguish between the following pairs of compounds: Benzoic acid and Ethyl benzoate.

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**302.** Give chemical tests to distinguish between the following pairs :  
Pentan -2-one and pentan -3-one

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**303.** Give simple chemical tests to distinguish between the following pairs of compounds: Benzaldehyde and Acetophenone.





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**304.** Express 3660 in roman numbers.



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**305.** Express 3661 in roman numbers.



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**306.** Express 3662 in roman numbers.



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**307.** Give simple chemical tests to distinguish between the following pairs of compounds.

Ethanal and Propanal



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**308.** Give simple chemical tests to distinguish between the following pairs of compounds

Phenol and Benzoic acid

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**309.** Give simple chemical tests to distinguish between the following pairs of compounds.

Acetophenone and Benzophenone

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**310.** Among  $CH_3CH_2CH(Br)COOH$  and  $CH_3CH(Br)CH_2COOH$  which is stronger acid and why ?

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**311.** How are carboxylic acids prepared from the following : Primary alcohol.

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**312.** How are carboxylic acids prepared from the following : Grignard reagent.

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**313.** Give chemical reactions for conversion of bromobenzene into benzoic acid.

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**314.** Write Aldol condensation reaction.

 [Watch Video Solution](#)

315. Write Hell Volhard Zelinsky reaction.

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316. Complete the following :

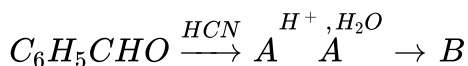


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317. Carboxylic acids do not give the characteristic reactions of carbonyl group. Explain.

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318. Complete the following :

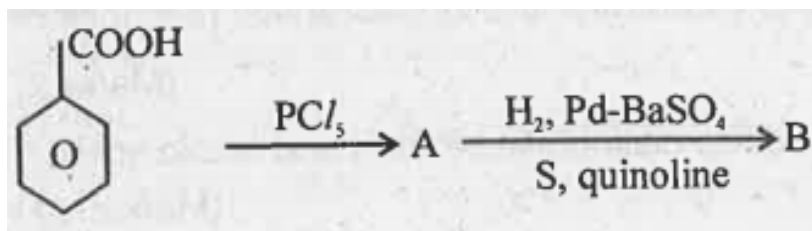


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319. Explain why aldehydes are more reactive than ketones towards nucleophilic addition reactions ?

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320. Complete the following:

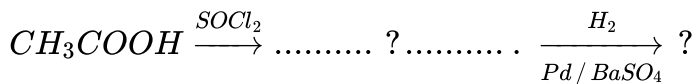


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321. What is formalin solution ? Give its one use..

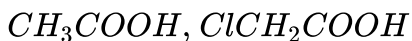
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322. Complete the following reaction:



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323. Arrange the following in increasing order of acid strength :



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324. Why are bond length of C = O in carboxylic acid is slightly larger than that in aldehyde and ketone ?

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325. Complete the following reaction:  $C_6H_5Br + Mg \xrightarrow{\text{ether}} ? \xrightarrow[H_3O^+]{CO_2} ?$

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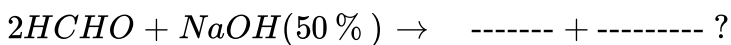
326. What is the function of rhodopsin in eyes?

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327. How will you distinguish between  $CH_3CHO$  and  $CH_3\overset{O}{\parallel}CCH_3$ ?

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328. Complete the following reaction :



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329. Which of the following is more acidic  $CH_3OH$ ,  $C_6H_5OH$ ?

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330. Name the main component of rhodopsin protein?

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331. Name the vitamin that is used to make healthy eyesight?

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332. Answer in one word- A vitamin called Retinol.

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333. Mention any two vitamin A rich vegetables?

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334. Compare the acidic strength of  $CH_3COOH$  and  $HCOOH$

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**335.** Write Wolff Kishner reduction.

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**336.** Write Clemmensen reduction.

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**337.** Complete the following statement- Retinol is-

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**338.** How will you convert Benzene into Benzaldehyde ?

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339. How will you convert benzene into Benzoic acid ?

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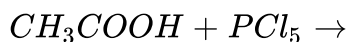
340. How will you convert Benzene into acetophenone.

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341. Aromatic aldehydes and ketones are less reactive than corresponding Aliphatic compounds. Explain.

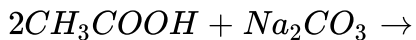
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342. Complete the following:



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**343.** Complete the following:



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**344.** Why formaldehyde is more reactive than Acetone ?

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**345.** Complete the following:



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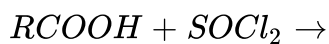
**346.** Complete the following:  $\text{C}_2\text{H}_5\text{COOH} + \text{NaOH} \rightarrow$

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347. Explain why aldehydes are more reactive than ketones towards nucleophilic addition reactions ?

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348. Complete the following:



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349. Complete the following:



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350. What happens when acetone reacts with HCN?

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**351.** The melting point of butanoic acid ( $C_3H_7COOH$ ) is higher than pentanoic acid ( $C_4H_9COOH$ ). Explain.

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**352.** Which mineral is required for the body specially for strong teeth and bones?

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**353.** What happens when acetaldehyde reacts with Hydrazine .

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**354.** What happens when acetaldehyde reacts with Phenyl hydrazine.

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**355.** Give chemical test to distinguish between benzaldehyde and benzoic acid.

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**356.** Write short note on Rosenmund's reaction.

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**357.** Describe the following reaction : Cannizzaro's reaction.

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**358.** Give simple chemical tests to distinguish between the following pairs of compounds.

Acetophenone and Benzophenone

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**359.** Give simple chemical tests to distinguish between the following pairs of compounds.

Ethanal and Propanal

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**360.** Give simple chemical tests to distinguish between the following pairs of compounds: Propanal and propanone.

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**361.** An organic compound A contains 69.77% carbon 11.63% hydrogen and rest oxygen. The molecular Mass of the compound is 86. It does not reduce Tollen's reagent but forms an addition compound with sodium hydrogen sulphite and gives positive iodoform test. On vigorous Oxidation it gives ethanoic and propanoic acids. Derive the Possible structure of A.





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**362.** Give simple chemical tests to distinguish between the following pairs of compounds: Propanal and propanone.



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**363.** Give simple chemical tests to distinguish between the following pairs of compounds.

Acetophenone and Benzophenone



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**364.** Give simple chemical tests to distinguish between the following pairs of compounds

Phenol and Benzoic acid



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**365.** How will you bring about the following conversion ?

Ethanol to ethane.

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**366.** How will you bring about the following conversions :Benzaldehyde to Benzophenone

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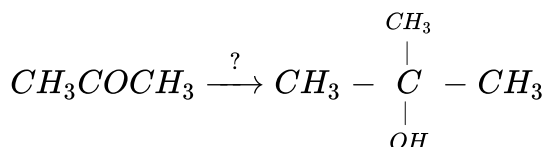
**367.** An organic compound A has molecular formula  $C_8H_{16}O_2$ . It gets hydrolysed with dil.  $H_2SO_4$  and gives a carboxylic acid B and an alcohol C. Oxidation of C with chromic acid also produced B. C on dehydration gives but-1-ene. Write equations for the reactions involved.

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368. Write Hell Volhard Zelinsky reaction.

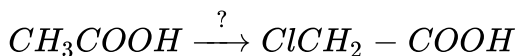
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369. Name the reagents used in the following reactions :



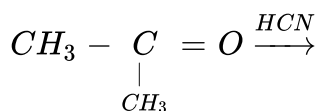
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370. Name the reagents used in the following reactions :



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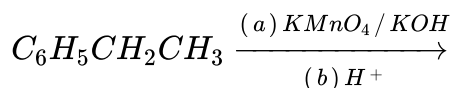
371. Predict the products of the following reaction :





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372. Predict the products of the following reaction :



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373. Predict the products of the following reaction :  $CH_3COOH \xrightarrow{NH_3 / \Delta}$



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374. Explain the mechanism of a nucleophilic attack on the carbonyl group of an aldehyde or a ketone.



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**375.** Give simple chemical tests to distinguish between the following pairs of compounds.

Ethanal and Propanal

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**376.** How will you convert benzoic acid to benzaldehyde?

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**377.** How will you bring about the following conversion ?

Ethanal to 2- hydroxy propanoic acid. Give complete reaction.

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**378.** How will you bring about the following conversions : Propanone to propene

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379. Describe the following reaction : Cannizzaro's reaction.

[▶ Watch Video Solution](#)

380. Describe the following giving chemical equations : Decarboxylation.

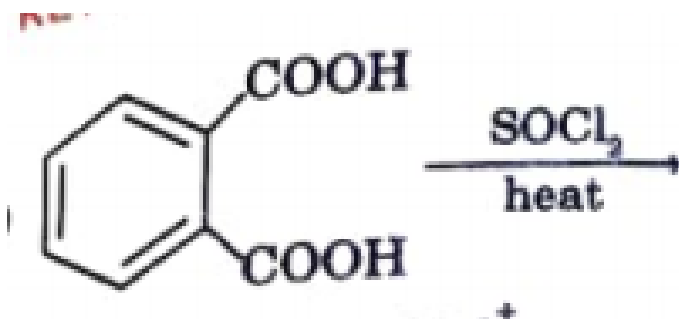
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381. Complete the following chemical equation :



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382. Complete the following chemical equation :



[▶ Watch Video Solution](#)

383. Complete the following chemical equation :  $C_6H_5CONH_2 \xrightarrow[\text{heat}]{H_3O^+}$

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384. In the preparation of acetaldehyde from ethyl alcohol, it is distilled out as soon as it is formed. Explain.

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**385.** Give a chemical test to differentiate between formaldehyde and acetaldehyde. Also write the chemical equation.

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**386.** It is necessary to control pH during the reaction of carbonyl compounds with ammonia derivatives. Explain.

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**387.** Sodium bisulphite is used for the purification of aldehydes and ketones. Explain.

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**388.** Give chemical tests to distinguish between Propanal and propanone.

 [Watch Video Solution](#)



**389.** Write a chemical test to distinguish between benzaldehyde and acetophenone.

 [Watch Video Solution](#)

**390.** How would you obtain But-2-enal from ethanal?

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**391.** Express 3663 in roman numbers.

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**392.** Benzoic acid from ethylbenzene

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**393.** Discuss the nature of C-O Bond in carbonyl compounds.

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**394.** Write the reaction of acetaldehyde with Grignard reagent.

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**395.** Explain the oxidation of carbonyl compounds with Fehling solution.

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**396.** Express 3665 in roman numbers.

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**397.** Express 3666 in roman numbers.



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**398.** Express 3667 in roman numbers.



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**399.** Express 3668 in roman numbers.



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**400.** Express 3670 in roman numbers.



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**401.** Write cross aldol condensation.



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**402.** Give one chemical test of distinguish between Pentanone-2 and Pentanone-3.

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**403.** Write a chemical test to distinguish between benzaldehyde and acetophenone.

 [Watch Video Solution](#)

**404.** Write a chemical test to distinguish between phenol and benzoic acid.

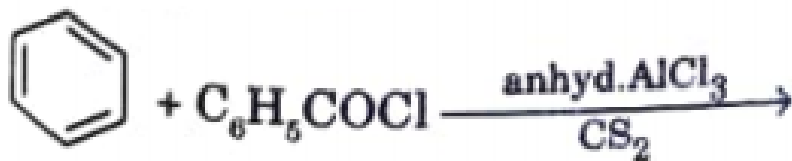
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**405.** Write a chemical test to distinguish between benzaldehyde and acetophenone.



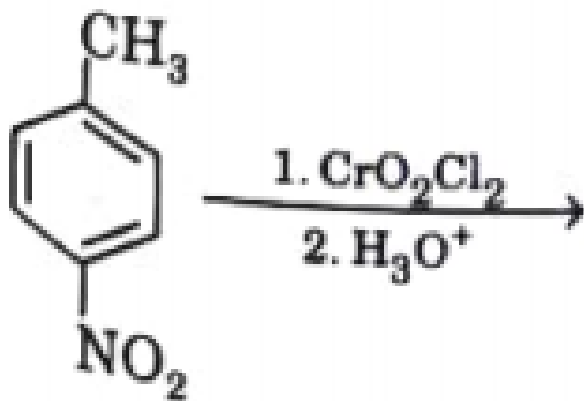
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406. Write the structure of the main products in the following reaction :



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407. Write the structure of the main products in the following reaction :



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**408.** Express 3671 in roman numbers.

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**409.** Express 3672 in roman numbers.

 [Watch Video Solution](#)

**410.** Express 3673 in roman numbers.

 [Watch Video Solution](#)

**411.** Express 3675 in roman numbers.

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**412.** Express 3676 in roman numbers.



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**413.** Give simple chemical tests to distinguish between the following pairs of compounds.

Ethanal and Propanal



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**414.** Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is a strong acid than phenol. Why ?



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**415.** Complete the following reactions:  $CH_3COOH \xrightarrow{Br_2 / P}$



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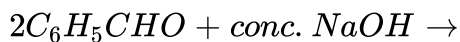
416. Give chemical tests to distinguish between the following pair of compounds : Benzoic acid and phenol.

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417. Express 3677 in roman numbers.

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418. Write the products of the following reaction :



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419. Express 3678 in roman numbers.

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420. Express 3680 in roman numbers.

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421. Express 3681 in roman numbers.

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422. Write the chemical equations to illustrate the following name reaction : Wolff-Kishner reduction.

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423. Express 3682 in roman numbers.

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**424.** Express 3683 in roman numbers.

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**425.** Aldehydes, ketones and carboxylic acids contain  $>C=O$  group. Name the product obtained by the reaction between acetic acid and ethanol.

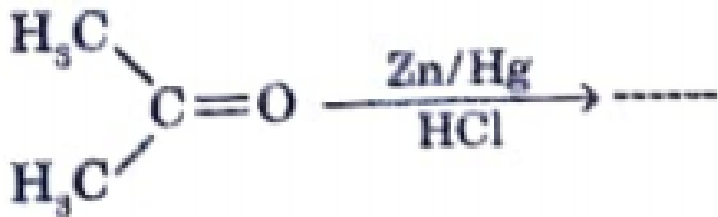
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**426.** Give a chemical test to distinguish between aldehyde and ketone.

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**427.** Aldehydes, ketones and carboxylic acids contain  $>C=O$  group. Two chemical reactions are given below : (1) Identify the products of each

reaction. (2) Give the name of each reaction.



(K)

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428. Express 3685 in roman numbers.

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429. Express 3686 in roman numbers.

[▶ Watch Video Solution](#)

**430.** Express 3687 in roman numbers.

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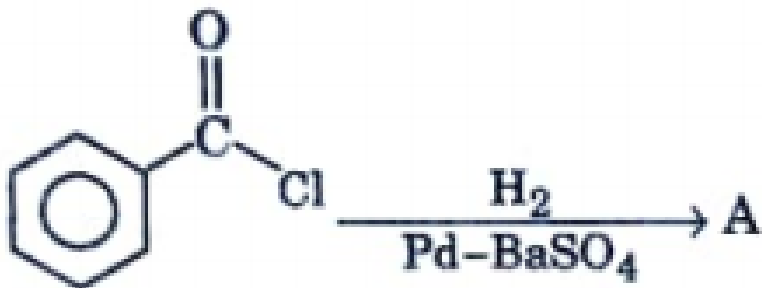
**431.** How will you bring about the following conversion : Toluene to benzaldehyde.

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**432.** How will you bring about the following conversion : Ethanenitrile to ethanoic acid.

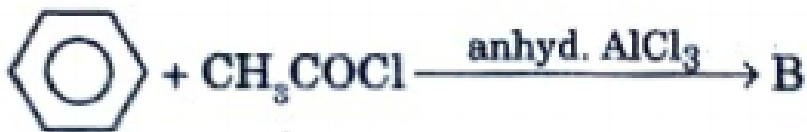
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433. Identify A, B, C and D in the following reaction :



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434. Identify A, B, C and D in the following reaction :



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435. Express 3688 in roman numbers.

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**436.** Express 3700 in roman numbers.



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**437.** Express 3712 in roman numbers.



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**438.** Express 3701 in roman numbers.



**Watch Video Solution**

**439.** Express 3702 in roman numbers.



**Watch Video Solution**

**440.** Express 3703 in roman numbers.

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**441.** Distinguish between formic acid and acetaldehyde by a suitable chemical test.

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**442.** Arrange the following carbonyl compounds in the increasing order of their reactivity in nucleophilic addition reactions : Ethanal, Propanal, Propanone, butanone .

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**443.** Differentiate with chemical test : Ethanal and Ethanoic acid.

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**444.** Differentiate with chemical test : Benzaldehyde and Acetophenone.

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**445.** Express 3705 in roman numbers.

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**446.** Express 3706 in roman numbers.

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**447.** Express 3707 in roman numbers.

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448. Distinguish between the following pairs by chemical test:

$C_6H_5COOH$  and  $C_6H_5OH$

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449. Which one of the following does not respond to Tollen's test?

A. HCHO

B.  $CH_3CHO$

C. HCOOH

D.  $CH_3COCH_3$

**Answer:**

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450. Express 3710 in roman numbers.

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**451.** Express 3711 in roman numbers.

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**452.** Express 3713 in roman numbers.

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**453.** Explain with the help of chemical reactions what happens when acetone is treated with semicarbazide.

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**454.** How will you differentiate between benzoic acid and phenol?

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**455.** How will you bring about the following conversion ?

Toluene to benzaldehyde.

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**456.** How will you bring about the following conversion ?

Benzoyl chloride to benzaldehyde.

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**457.** Express 3715 in roman numbers.

 [Watch Video Solution](#)

**458.** Draw structures of 1-bromo-2-iodocyclobutane

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459. Express 3716 in roman numbers.

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460. Express 3717 in roman numbers.

 [Watch Video Solution](#)

461. Express 3718 in roman numbers.

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462. Aldehydes, ketones and carboxylic acids are carbonyl compounds.

Write the reaction of carboxylic acid with the following reagents. (Write the chemical equation)

Thionyl chloride ( $SOCl_2$ )

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**463.** Aldehydes, ketones and carboxylic acids are carbonyl compounds.

Write the reaction of carboxylic acid with the following reagents. (Write the chemical equation)

Chlorine in the presence of small amount of red phosphorus.

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**464.** Express 3720 in roman numbers.

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**465.** Express 3721 in roman numbers.

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**466.** Express 3722 in roman numbers.

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**467.** How will you bring about the following conversion ? (Write the chemical equation)

Ethanol  $\rightarrow$  ethanoic acid.

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**468.** How will you bring about the following conversion ? (Write the chemical equation)

Benzamide  $\rightarrow$  benzoic acid.

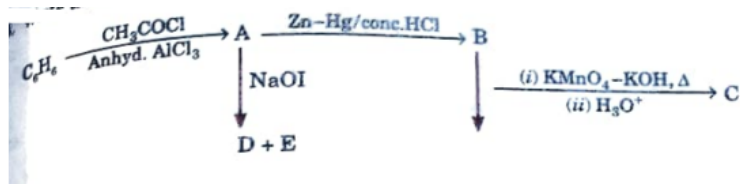
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**469.** How will you bring about the following conversion ? (Write the chemical equation)

Benzaldehyde  $\rightarrow$  meta nitro benzaldehyde.

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470. Write the structures of A, B, C, D and E in the following reactions :



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471. Write the chemical equation for the reaction involved in Cannizzaro reaction.

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472. Draw the structure semicarbazone of ethanal.

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473. Why is  $pK_a$  of  $F - CH_2 - COOH$  lower than that of  $Cl - CH_2 - COOH$ ?

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474. Give chemical tests to distinguish between Propanal and propanone.

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475. Write the chemical equation for Clemmensen reduction.

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476. Write the chemical equation for Cannizaro's reaction.

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**477.** Express 3723 in roman numbers.



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**478.** Express 3725 in roman numbers.



**Watch Video Solution**

**479.** Express 3726 in roman numbers.



**Watch Video Solution**

**480.** Express 3727 in roman numbers.



**Watch Video Solution**

**481.** Express 3728 in roman numbers.



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**482.** Express 3730 in roman numbers.



[Watch Video Solution](#)

**483.** Express 3731 in roman numbers.



[Watch Video Solution](#)

**484.** Express 3732 in roman numbers.



[Watch Video Solution](#)

**485.** Express 3733 in roman numbers.



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**486.** Express 3735 in roman numbers.

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**487.** Express 3736 in roman numbers.

 [Watch Video Solution](#)

**488.** Express 3737 in roman numbers.

 [Watch Video Solution](#)

**489.** Express 3738 in roman numbers.

 [Watch Video Solution](#)

**490.** Express 3750 in roman numbers.



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**491.** Express 3751 in roman numbers.



[Watch Video Solution](#)

**492.** Express 3752 in roman numbers.



[Watch Video Solution](#)

**493.** Express 3753 in roman numbers.



[Watch Video Solution](#)

**494.** Express 3755 in roman numbers.



[Watch Video Solution](#)

**495.** Express 3756 in roman numbers.

 [Watch Video Solution](#)

**496.** Express 3757 in roman numbers.

 [Watch Video Solution](#)

**497.** Express 3758 in roman numbers.

 [Watch Video Solution](#)

**498.** Express 3760 in roman numbers.

 [Watch Video Solution](#)

**499.** Express 3761 in roman numbers.



[Watch Video Solution](#)

**500.** Express 3762 in roman numbers.



[Watch Video Solution](#)

**501.** Express 3763 in roman numbers.



[Watch Video Solution](#)

**502.** Express 3765 in roman numbers.



[Watch Video Solution](#)

**503.** Express 3766 in roman numbers.



[Watch Video Solution](#)

**504.** Express 3767 in roman numbers.

 [Watch Video Solution](#)

**505.** Express 3768 in roman numbers.

 [Watch Video Solution](#)

**506.** Express 3770 in roman numbers.

 [Watch Video Solution](#)

**507.** Express 3771 in roman numbers.

 [Watch Video Solution](#)

**508.** Express 3772 in roman numbers.



[Watch Video Solution](#)

**509.** Express 3773 in roman numbers.



[Watch Video Solution](#)

**510.** Express 3775 in roman numbers.



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**511.** Express 3776 in roman numbers.



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**512.** Express 3777 in roman numbers.



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513. Express 3780 in roman numbers.

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514. Express 3781 in roman numbers.

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515. Express 3782 in roman numbers.

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516. Distinguish between:  $CH_3CH_2COOH$  and  $HCOOH$

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517. Arrange the following in the increasing order of their boiling points:



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518. Write the chemical reaction involved in Etard reaction.

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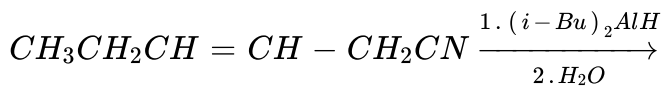
519. Arrange the following in the increasing order of their reactivity in nucleophilic addition reactions.  $CH_3CHO$ ,  $C_6H_5CHO$ ,  $HCHO$

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520. Why is  $pK_a$  of  $Cl - CH_2 - COOH$  lower than the  $pK_a$  of  $CH_3COOH$ ?

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521. Write the product in the following reaction.



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522. A and B are two functional isomers of compound  $\text{C}_3\text{H}_6\text{O}$ . On heating with  $\text{NaOH}$  and  $\text{I}_2$ , isomer A forms yellow precipitate of iodoform whereas isomer B does not form any precipitate. Write the formulae of A and B.

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523. Draw structures of 4-chloropentene

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524. Draw structures of 3-bromo-2-methylpropene



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525. Write IUPAC name of following :  $(CH_3)_2CHNH_2$

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526. Nitika's mother was using old butter for cooking. Nitika noticed foul smell from the butter and asked her mother not to use it. She told her mother that certain food materials containing fats and oils get spoiled when left for sometime and give foul smell and unpleased taste. Nitika's mother agreed and took fresh butter for cooking. Answer the following question : Why do oils, fats and oily eatables develop unpleasant odors and flavours ?

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527. Write IUPAC name of  $CH_3(CH_2)_2NH_2$

[Watch Video Solution](#)

528. Write IUPAC name of  $CH_3(CH_2)_2COOH$

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529. The reaction of formaldehyde with magnesium methyl bromide followed by hydrolysis gives

- A. secondary alcohol
- B. primary alcohol
- C. ketone
- D. tertiary alcohol.

**Answer:**

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530. Draw structures of 3-methylbutanal

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531. The molecule that can give Cannizzaro's reaction is

- A. acetaldehyde
- B. formaldehyde
- C. butyraldehyde
- D. propionaldehyde.

**Answer:**

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532. Draw structures of p-methylbenzaldehyde

- A.

B.

C.

D.

**Answer:**



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**533.** Draw structure of 4-chloropentan-2-one

A.

B.

C.

D.

**Answer:**



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534. Draw structure of hex-2-en-4-ynoic acid

A.

B.

C.

D.

Answer:



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535. Which of the following gives iodoform test ?

A.  $CH_3OH$

B.  $CH_3COCH_2CH_3$

C. HCHO

D.  $CH_3COOH$ .



**Answer:**

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**536.** Write IUPAC name of  $CH_3CO(CH_2)_4CH_3$

A.

B.

C.

D.

**Answer:**

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**537.** Write the IUPAC name of following:



A.

B.

C.

D.

**Answer:**



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**538.** Write the IUPAC name of following:  $CH_3(CH_2)_5CHO$

A.

B.

C.

D.

**Answer:**



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539. Write the iupac name:  $\text{CH}_3\overset{\text{CH}_3}{\underset{|}{\text{C}}}\text{HCH}_3$

- A.
- B.
- C.
- D.

Answer:

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540. Write the iupac name of compound:  $\text{CH}_3\overset{\text{O}}{\parallel}{\text{C}}\text{CH}_3$

- A.
- B.
- C.

D.

Answer:

 [Watch Video Solution](#)

541. Write the iupac name of compound:  $\text{CH}_3\overset{\text{Br}}{\underset{\text{O}}{\text{C}}}\text{CHCH}_3$

A.

B.

C.

D.

Answer:

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542. Write structure of terephthalic acid

A.

B.

C.

D.

**Answer:**



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**543.** Write the structure of 2-methylbenzoic acid

A.

B.

C.

D.

**Answer:**



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544. Write iupac name  $CH_3CH_2CH_2\underset{\substack{| \\ OH}}{CH}CH_2CH_2CH_2CHO$

- A.
- B.
- C.
- D.

Answer:



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545. Write the lupac name of following :  $CH_3CH_2CH_2\underset{\substack{| \\ OH}}{CH}\underset{\substack{| \\ CH_2CH_3}}{CH}CHO$

- A.
- B.
- C.

D.

**Answer:**



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**546.** Write the IUPAC name of following :  $CH_3\underset{\substack{| \\ OH}}{CH}COOH$

A.

B.

C.

D.

**Answer:**



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**547.** Write structure of but-2-en-1-oic acid

A.

B.

C.

D.

**Answer:**



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**548.** Write structure of 3-phenylprop-2-enoic acid

A.

B.

C.

D.

**Answer:**



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549. Write structure of o-salicylic acid

A.

B.

C.

D.

**Answer:**



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550. What will happen if reduction of acetone takes place?

A.

B.

C.

D.

**Answer:**



**Watch Video Solution**

**551.** What will happen when bromoethane is treated with aq. KOH?

A.

B.

C.

D.

**Answer:**



**Watch Video Solution**

**552.** Write IUPAC name  $CH_2 = CH - CH_2OH$

A.

B.

C.

D.

**Answer:**

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**553.** Express 3783 in roman numbers.

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**554.** Express 3785 in roman numbers.

 [Watch Video Solution](#)

**555.** Express 3786 in roman numbers.



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**556.** Express 3787 in roman numbers.



**Watch Video Solution**

**557.** Express 3800 in roman numbers.



**Watch Video Solution**

**558.** Express 3801 in roman numbers.



**Watch Video Solution**

**559.** Express 3802 in roman numbers.



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**560.** Express 3803 in roman numbers.



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**561.** Express 3805 in roman numbers.



[Watch Video Solution](#)

**562.** Express 3806 in roman numbers.



[Watch Video Solution](#)

**563.** Express 3807 in roman numbers.



[Watch Video Solution](#)

**564.** Express 3808 in roman numbers.

 [Watch Video Solution](#)

**565.** Express 3810 in roman numbers.

 [Watch Video Solution](#)

**566.** Express 3811 in roman numbers.

 [Watch Video Solution](#)

**567.** Express 3812 in roman numbers.

 [Watch Video Solution](#)

**568.** Express 3813 in roman numbers.



[Watch Video Solution](#)

**569.** Express 3815 in roman numbers.



[Watch Video Solution](#)

**570.** Express 3816 in roman numbers.



[Watch Video Solution](#)

**571.** Express 3817 in roman numbers.



[Watch Video Solution](#)

**572.** Express 3818 in roman numbers.



[Watch Video Solution](#)

**573.** Express 3820 in roman numbers.

 [Watch Video Solution](#)

**574.** Express 3821 in roman numbers.

 [Watch Video Solution](#)

**575.** Express 3822 in roman numbers.

 [Watch Video Solution](#)

**576.** Express 3823 in roman numbers.

 [Watch Video Solution](#)

**577.** Express 3825 in roman numbers.





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**578.** Express 3826 in roman numbers.



[Watch Video Solution](#)

**579.** Express 3827 in roman numbers.



[Watch Video Solution](#)

**580.** Express 3828 in roman numbers.



[Watch Video Solution](#)

**581.** Express 3830 in roman numbers.



[Watch Video Solution](#)

**582.** Express 3831 in roman numbers.

A.

B.

C.

D.

**Answer:**



[Watch Video Solution](#)

**583.** Express 3832 in roman numbers.



[Watch Video Solution](#)

**584.** Express 3833 in roman numbers.



[Watch Video Solution](#)

**585.** Express 3835 in roman numbers.



**Watch Video Solution**

**586.** Express 3850 in roman numbers.



**Watch Video Solution**

**587.** Express 3851 in roman numbers.



**Watch Video Solution**

**588.** Express 3852 in roman numbers.



**Watch Video Solution**

**589.** Express 3853 in roman numbers.



**Watch Video Solution**

**590.** Express 3855 in roman numbers.



**Watch Video Solution**

**591.** Express 3856 in roman numbers.



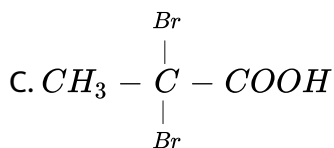
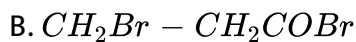
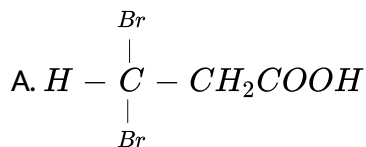
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**592.** Express 3857 in roman numbers.



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593. Propionic acid with  $Br_2/P$  yields a dibromo product. Its structure will be



**Answer:**

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594. Express 3860 in roman numbers.

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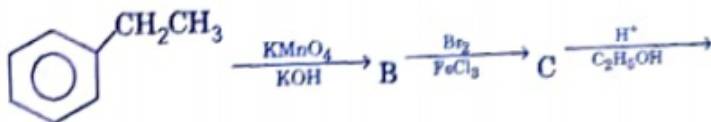
595. Which of the following reactions will not result in the formation of C - C bond ?

- A. Wurtz reaction
- B. Friedel Crafts acylation
- C. Reimer Tiemann reaction
- D. Cannizzaro reaction

Answer:

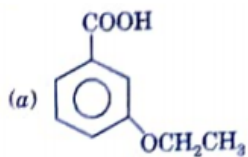
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596. In a set of reactions, ethyl benzene yielded a product D.

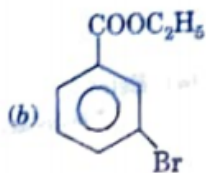


D would be

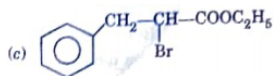
A.



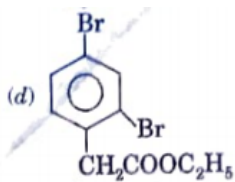
B.



C.



D.

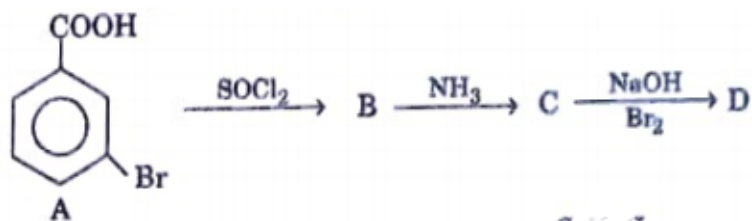


Answer:

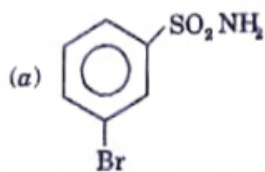


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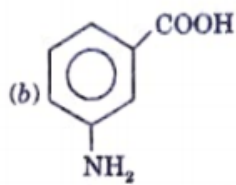
597. In a set of reactions m-bromobenzoic acid gave a product D. Identify the product D.



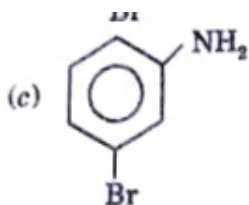
A.



B.

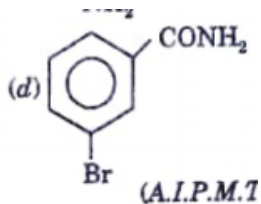


C.





D.



**Answer:**

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598. Clemmensen reduction of a ketone is carried out in the presence of which of the following ?

A. Glycol with KOH

B. Zn-Hg with HCl

C.  $LiAlH_4$

D.  $H_2$  and Pt as catalyst

**Answer:**

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599.  $CH_3CHO$  and  $C_6H_5CH_2CHO$  can be distinguished chemically by

- A. Benedict's test
- B. Iodoform test
- C. Tollen's reagent test
- D. Fehling's solution test

Answer:

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600. Express 3861 in roman numbers.

 [Watch Video Solution](#)

601. Express 3862 in roman numbers.



 [Watch Video Solution](#)

**602.** Express 3863 in roman numbers.

 [Watch Video Solution](#)

**603.** Express 3865 in roman numbers.

 [Watch Video Solution](#)

**604.** Express 3866 in roman numbers.

 [Watch Video Solution](#)

**605.** Express 3867 in roman numbers.

 [Watch Video Solution](#)

**606.** Express 3868 in roman numbers.



**Watch Video Solution**

**607.** Express 3870 in roman numbers.



**Watch Video Solution**

**608.** Express 3871 in roman numbers.



**Watch Video Solution**

**609.** Express 3872 in roman numbers.



**Watch Video Solution**

**610.** Express 3873 in roman numbers.





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**611.** Express 3875 in roman numbers.



[Watch Video Solution](#)

**612.** Express 3876 in roman numbers.



[Watch Video Solution](#)

**613.** Express 3877 in roman numbers.



[Watch Video Solution](#)

**614.** Express 3878 in roman numbers.



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**615.** Express 3880 in roman numbers.



**Watch Video Solution**

**616.** Express 3881 in roman numbers.



**Watch Video Solution**

**617.** Express 3882 in roman numbers.



**Watch Video Solution**

**618.** Express 3883 in roman numbers.



**Watch Video Solution**

**619.** Express 3885 in roman numbers.





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**620.** Express 3886 in roman numbers.



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**621.** Express 3887 in roman numbers.



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**622.** Express 4000 in roman numbers.



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**623.** Express 4001 in roman numbers.



[Watch Video Solution](#)

**624.** Express 4002 in roman numbers.

 [Watch Video Solution](#)

**625.** Express 4003 in roman numbers.

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**626.** Express 4005 in roman numbers.

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**627.** Which of the following reagents may be used to distinguish between phenol and benzoic acid?

A. Aqueous NaOH

B. Tollen's reagent



C. Molisch reagent

D. Neutral  $FeCl_3$

**Answer:**

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**628.** Trichloroacetaldehyde was subjected to Cannizzaro's reaction by using NaOH. The mixture of the products contains sodium trichloroacetate ion and another compound. The other compound is

A. 2,2,2-trichloroethanol

B. trichloromethanol

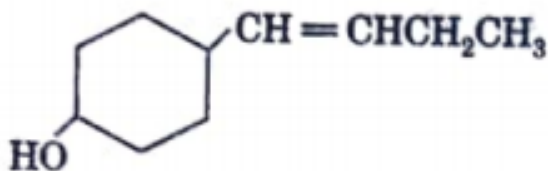
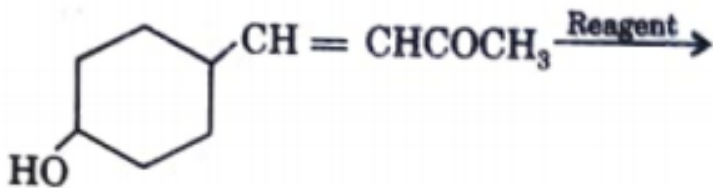
C. 2,2,2-trichloroproupanol

D. chloroform

**Answer:**

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629. In the given transformation, which of the following is the most appropriate reagent?



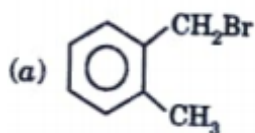
- A.  $\text{Zn-Hg/HCl}$
- B.  $\text{Na, liq. } \text{NH}_3$
- C.  $\text{NaBH}_4$
- D.  $\text{NH}_2 - \text{NH}_2 / \text{OH}^-$

Answer:

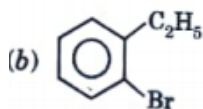
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630. Compound (A),  $C_8H_9Br$ , gives a light yellow precipitate when warmed with alcoholic  $AgNO_3$ . Oxidation of (A) gives an acid (B),  $C_8H_6O_4$ . (B) easily forms anhydride on heating. Identify the compound (A).

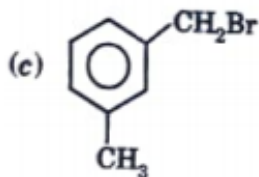
A.



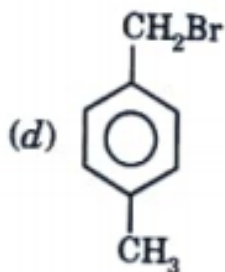
B.



C.



D.



Answer:

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631. In the reaction,  $\text{CH}_3\text{COOH} \xrightarrow{\text{LiAlH}_4} \text{A} \xrightarrow{\text{PCl}_5} \text{B} \xrightarrow{\text{alc. KOH}} \text{C}$ , the product

C is

A. acetyl chloride

B. acetaldehyde

C. acetylene

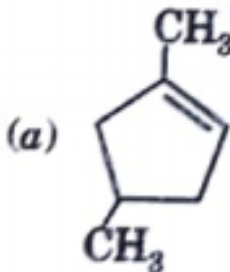
D. ethylene

Answer:

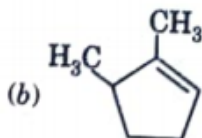
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632. Which compound would give 5-keto-2-methyl-hexanal upon ozonolysis?

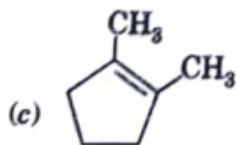
A.



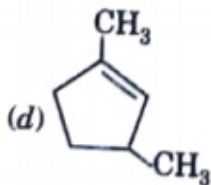
B.



C.



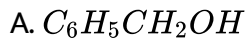
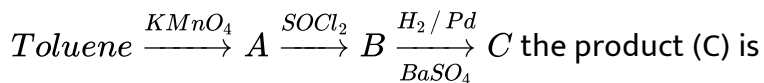
D.

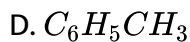
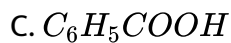


Answer:

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633. In the following sequence of reactions -





**Answer:**

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**634.** Which of the following does not undergo Cannizzaro's reaction ?

A. Benzaldehyde

B. 2-Methyl Propanal

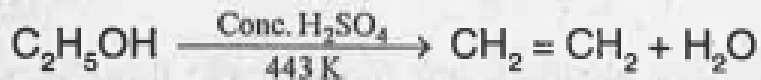
C. p-Methoxy benzaldehyde

D. 2,2-Dimethyl propanal

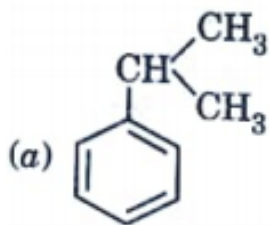
**Answer:**

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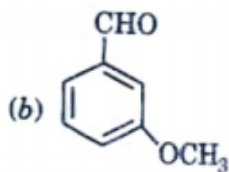
635. Explain the mechanism of the following reaction :



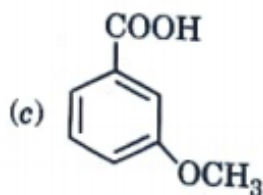
A.



B.

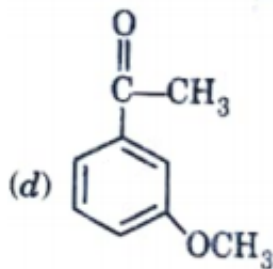


C.





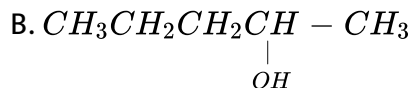
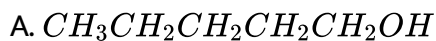
D.

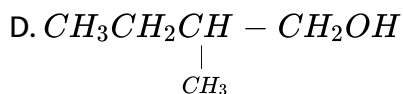
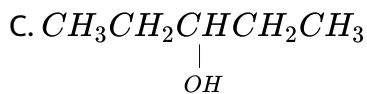


Answer:

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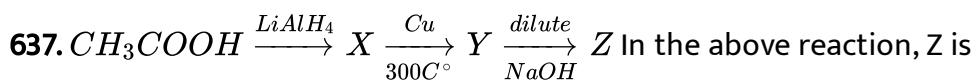
636. A compound 'A' having molecular formula  $C_5H_{12}O$ , on oxidation gives a compound 'B' with molecular formula  $C_5H_{10}O$ . Compound 'B' gives 2,4-dinitrophenyl hydrazine derivative but did not answer haloform test or silver mirror test. The structure of compound 'A' is





**Answer:**

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A. Aldol

B. Ketol

C. Acetal

D. Butanol

**Answer:**

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**638.** Aldehydes that do not undergo aldol condensation are 1. Propanal 2. trichloroethanal 3. methanal 4. ethanal 5. benzaldehyde

- A. 3 and 4 only
- B. 3 and 5 only
- C. 1,2 and 3 only
- D. 2,3 and 5 only

**Answer:**



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**639.** Which compound among the following gives a positive iodoform test ? 1. Ethanol 2. Ethanal 3. 1-Butanol 4. 2-Butanol 5. Phenyl ethanal

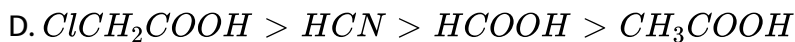
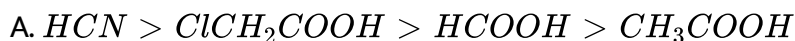
- A. 1,2 and 5
- B. 1,3 and 4
- C. 1,2 and 3

D. 1,2 and 4

Answer:

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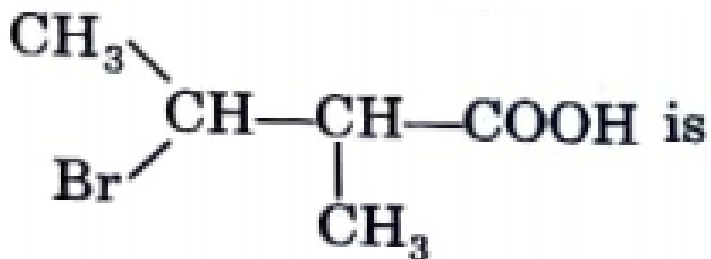
640. In  $S_N2$  reactions, the correct order of reactivity for the following compounds :  $CH_3Cl$ ,  $CH_3CH_2Cl$ ,  $(CH_3)_2CHCl$  and  $(CH_3)_3Cl$  is



Answer:

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641. The IUPAC name of



- A. 2-Bromo-3-methylbutanoic acid
- B. 2-Methyl-3-bromobutanoic acid
- C. 3-Bromo-2-methylbutanoic acid
- D. 3-Bromo-2, 3-dimethylpropanoic acid

Answer:

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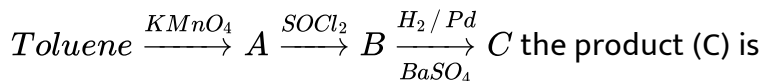
642. When Propionic acid is treated with aqueous  $\text{NaHCO}_3$ ,  $\text{CO}_2$  is liberated. The 'C' of  $\text{CO}_2$  comes from

- A. methyl group
- B. carboxylic acid group
- C. methylene group
- D. bicarbonate

**Answer:**

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**643.** In the following sequence of reactions -



- A. acetaldehyde
- B. formaldehyde
- C. acetic acid
- D. acetone

**Answer:**



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**644.** A Compound 'X' neither reacts with sodium displacing hydrogen nor with phosphorus pentachloride to give hydrogen chloride. X reduces an alkaline solution of Cu(II) salt on gentle warming. The structure of X is

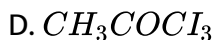
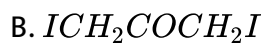
- A. primary alcohol
- B. secondary alcohol
- C. a ketone
- D. an aldehyde

**Answer:**



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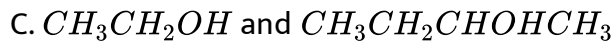
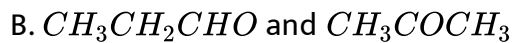
**645.** Which of the following compounds is not formed in iodoform reaction of acetone ?



**Answer:**

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**646.** Which of the following pairs has the same size ?

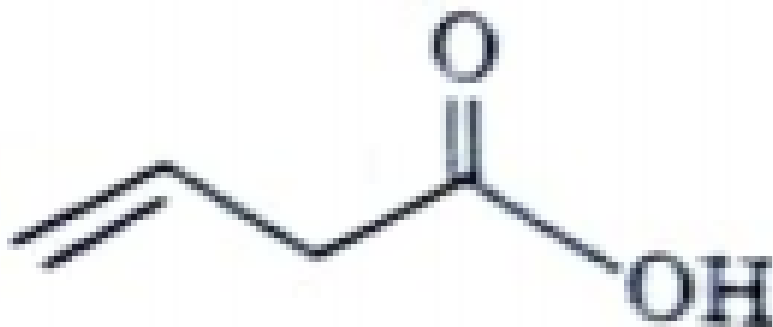


**Answer:**

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647. The IUPAC name of



- A. but-3-enoic acid
- B. but-1-enoic acid
- C. pent-4-enoic acid
- D. prop-2-enoic acid

**Answer:**

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648. The relative acidic strengths of benzoic acid, o-toluic acid and p-toluic acid is of the decreasing order -

- A. p-toluic acid > o-toluic acid > benzoic acid
- B. o-toluic acid > p-toluic acid > benzoic acid
- C. p-toluic acid > benzoic acid > o-toluic acid
- D. o-toluic acid > benzoic acid > p-toluic acid

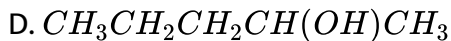
Answer:



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649. Upon treatment with  $I_2$  and aqueous NaOH, which of the following compounds will form iodoform ?

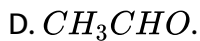
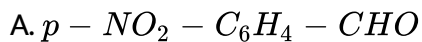
- A.  $CH_3CH_2CH_2CH_2CHO$
- B.  $CH_3CH_2COCH_2CH_3$
- C.  $CH_3CH_2CH_2CH_2CH_2OH$



Answer:

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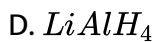
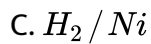
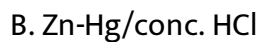
650. Which of the following does not undergo Cannizzaro's reaction ?



Answer:

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651. A carbonyl group can be converted into  $-CH_2-$  by

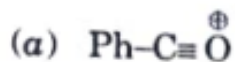


Answer:

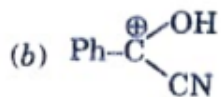
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652. To which of the following species octet rule is applicable:

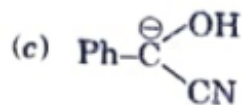
A.



B.



C.



D.

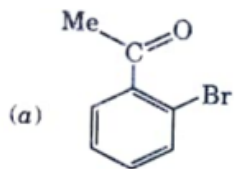


Answer:

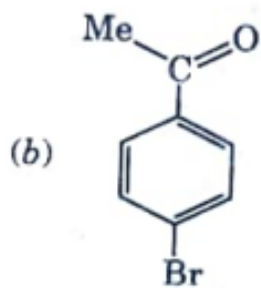
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653. Bromination of PhCOMe in acetic acid medium produces mainly

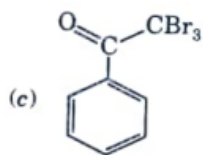
A.



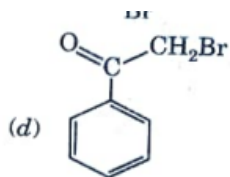
B.



C.



D.



**Answer:**



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654. Conversion of benzene to acetophenone can be brought by

- A. Wurtz reaction
- B. Wurtz-Fittig's reaction
- C. Friedel Crafts alkylation
- D. Friedel Crafts acylation.

Answer:



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655. IUPAC name of  $CH_3 - \underset{\substack{| \\ OH}}{CH} - CH_2 - \underset{\substack{| \\ COOH}}{CH} - CH_3$  is

- A. 4-hydroxy-1-methylpentanoic acid
- B. 4-hydroxy-2-methylpentanoic acid
- C. 2-hydroxy-4-methylpentanoic acid
- D. 2-hydroxy-2-methylpentanoic acid

**Answer:**

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**656.** Arrange the following compounds in increasing order of their property as indicated: Benzoic acid, 4- nitrobenzoic acid, 3, 4- dinitrobenzoic acid, 4-methoxy benzoic acid (acid strength)

A. II<III<IV<I

B. III<II<IV<I

C. IV<I<II<III

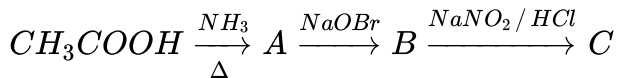
D. IV<III<II<I

**Answer:**

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657. Give the structures of A, B and C in the following reactions



A. o-bromosulphanilic acid

B. sulphanilamide

C. sulphanilic acid

D. p-bromosulphanilamide

**Answer:**

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658. Which one of the following transition metal ions is colourless in aqueous solution ?

A. (i) and (ii)

B. (i) and (iii)

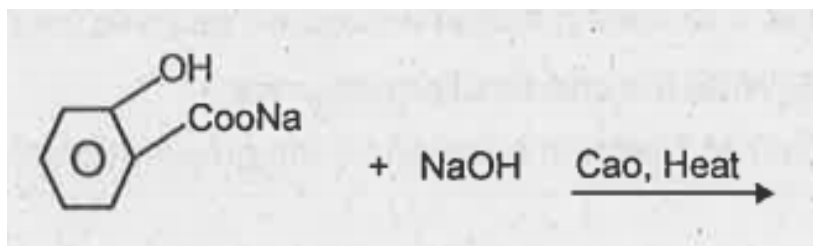
C. only (ii)

D. (i) and (iv)

Answer:

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659. Complete the following reaction:-



A.  $\text{HgSO}_4 / \text{dil. H}_2\text{SO}_4$

B.  $\text{BH}_3, \text{H}_2\text{O}_2 / \text{NaOH}$

C.  $\text{OsO}_4, \text{HIO}_4$

D.  $\text{NaNH}_2 / \text{CH}_3\text{I}, \text{HgSO}_4 / \text{dil. H}_2\text{SO}_4$

Answer:

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660. Compound 'A' with molecular formula  $C_4H_9Br$  is treated with aq. KOH solution. The rate of this reaction depends upon the concentration of the compound 'A' only. When another optically active isomer 'B' of this compound was treated with aq. KOH solution, the rate of reaction was found to be dependent on concentration of compound and KOH both. Write down the structural formula of both compounds 'A' and 'B'.

- A. 3-pentanone
- B. 2, 2-dimethylpropanal
- C. 3-hydroxy-2-pentene
- D. 3-methylbutanal

**Answer:**



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661. An organic compound A with molecular formula  $C_8H_8O$  gives positive DNP and iodoform tests. It does not reduce Tollen's or Fehling's reagent and does not decolourise bromine water also. On oxidation with chromic acid ( $H_2CrO_4$ ), it gives a carboxy acid (B) with molecular formula  $C_7H_6O_2$ . Deduce the structure of A and B.

- A. 2-ethylbenzaldehyde
- B. 2-methylbenzaldehyde
- C. acetophenone
- D. 3-methylbenzaldehyde

**Answer:**



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662. Which of the following compounds would 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.

- A. Methanal and ethanal
- B. Two moles of ethanal
- C. Methanal and propanone
- D. Ethanal and propanone

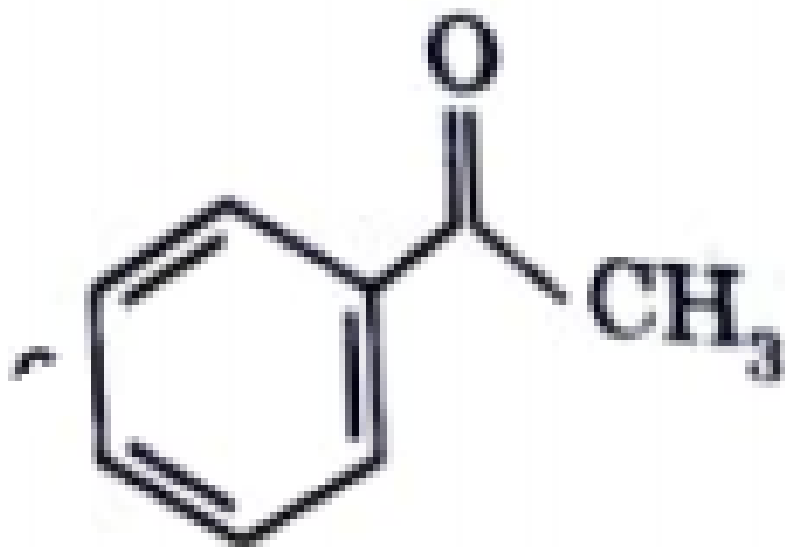
**Answer:**

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**663.** Write the structure of 2-methylpenten-3-one.

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664. The ketone



will not be

formed by

- A. reaction of benzene and acetyl chloride in the presence of  $AlCl_3$ .
- B. reaction of acetonitrile with phenyl magnesium bromide in ether followed by hydrolysis.
- C. treatment of acetyl chloride With dibenzyl cadmium.
- D. addition of water to phenyl acetylene in the presence of mercuric sulphate and dilute Sulphuric acid.

**Answer:**



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**665.** The formation of cyanohydrin from a ketone is an example of

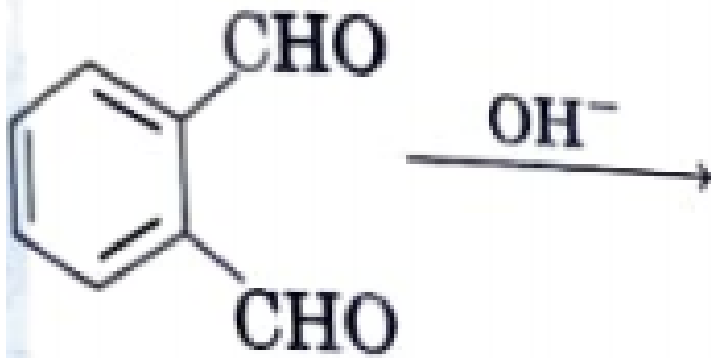
- A. nucleophilic addition
- B. electrophilic substitution
- C. nucleophilic substitution
- D. electrophilic addition.

**Answer:**



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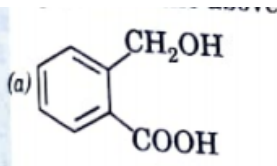
666.



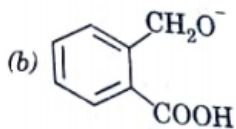
the product

of the above reaction is

A.

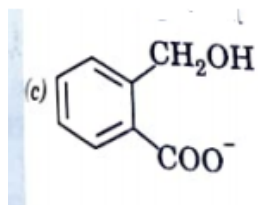


B.

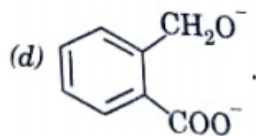




C.



D.



**Answer:**

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**667.** A mixture of benzaldehyde and formaldehyde when treated with 50% NaOH yields

- A. Sodium benzoate and sodium formate
- B. Sodium formate and benzyl alcohol
- C. Sodium benzoate and methyl alcohol

D. Benzyl alcohol and methyl alcohol

**Answer:**

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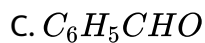
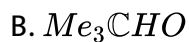
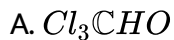
**668.** The major products obtained during ozonolysis of 2,3-dimethyl-1butene and subsequent reductions with Zn and  $H_2O$  are

- A. methanoic acid and 2-methyl-2-butanone
- B. methanal and 3-methyl-2-butanone
- C. methanol and 2,3-dimethyl-3-butanone
- D. methanoic acid and 2- methyl-3butanone.

**Answer:**

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669. Amongst the following compounds, the one that will not respond to Cannizzaro reaction upon treatment with alkali is

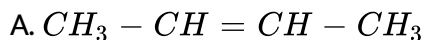


Answer:

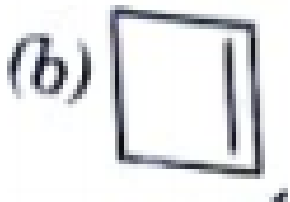


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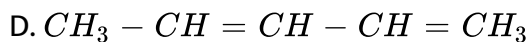
670. Draw the structure of simplest alkene.



B.



C.



Answer:

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671. Amongst the following compounds the one which would not respond to iodoform test is



C.  $CH_3COOH$

D.  $HC_3CHO$

**Answer:**

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**672.** What is the reagent used in Etard reaction?

A. Chromyl chloride

B. Ethanoyl chloride

C.  $SnCl_2$  and HCl

D. Cadmium chloride.

**Answer:**

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673. Which of the following compound when treated with dibenzyl cadmium yields benzyl methyl ketone?

- A. Acetone
- B. Acetaldehyde
- C. Acetic acid
- D. Acetyl chloride.

**Answer:**

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674. The reagent used in Wolff-Kishner reduction is:

- A.  $NH_2 - NH_2$  and KOH in ethylene glycol
- B. Zn-Hg/conc. HCl
- C.  $NaBH_4$
- D.  $Na - Hg / H_2O$ .

**Answer:**



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**675.** Which one of the following involves nucleophilic addition?

- A. Kolbe's reaction of phenol
- B. Williamson's synthesis of ethers
- C. Reimer-Tiemann reaction of phenol
- D. Aldol formation from ethanal

**Answer:**



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**676.** Benzene carbaldehyde is reacted with concentrated NaOH solution to give the products A and B. The product A can be used as food preservative and the product B is an aromatic hydroxy compound where

OH group is linked to  $sp^3$  hybridised carbon Atom next to benzene ring.

The products A and B are respectively,

- A. sodium benzoate and phenol
- B. sodium benzoate and phenyl methanol
- C. sodium benzoate and cresol
- D. sodium benzoate and picric acid.

**Answer:**



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**677.** An organic compound X is oxidised by using acidified  $K_2Cr_2O_7$  solution. The product obtained reacts with phenyl hydrazine but does not answer silver mirror test. The compound X is

- A. 2-propanol
- B. ethanal
- C. Benzene

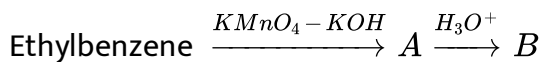


D. ethanol

**Answer:**

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**678.** Predict the product (B) in the following sequence of reactions:



A. Benzaldehyde

B. Benzophenone

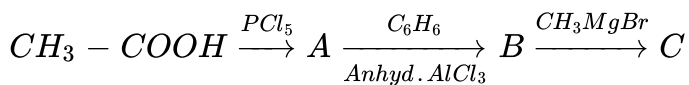
C. Benzoic acid

D. Acetophenone

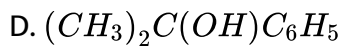
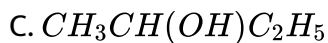
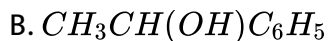
**Answer:**

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679. Predict the product 'C' in the following series of reactions:

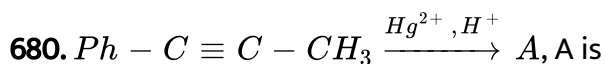


A.

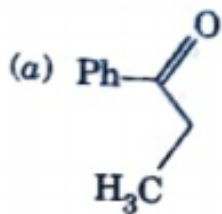


Answer:

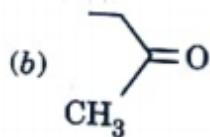
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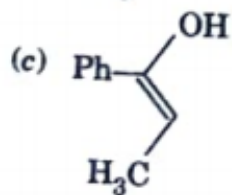
A.



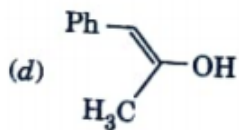
B.



C.



D.

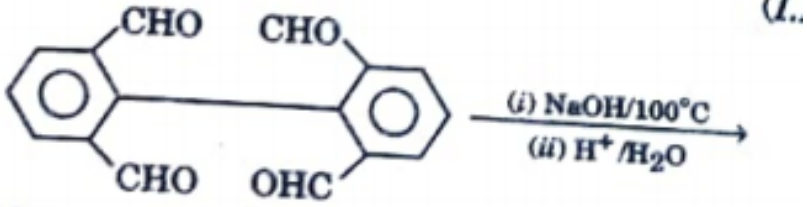


Answer:



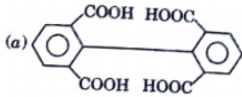
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681.

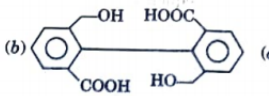


Major product is

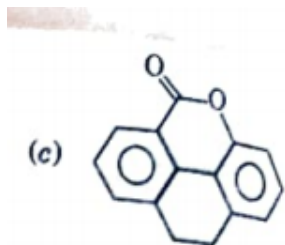
A.



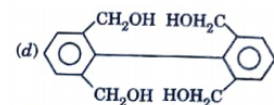
B.



C.



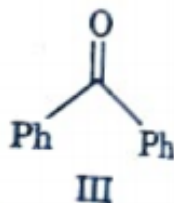
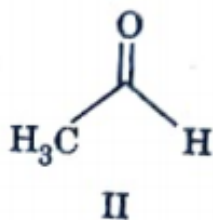
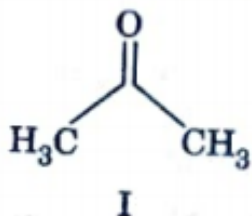
D.



Answer:

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682. The order of reactivity of phenyl magnesium bromide with the following compounds is



A.  $\text{IgtIIIgtI}$

B.  $\text{IgtIIIgtII}$

C.  $\text{IgtIgtIII}$

D. All react with same rate

**Answer:**

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**683.** The IUPAC name of  $\text{C}_6\text{H}_5\text{COCl}$  is

A. Benzoyl chloride

B. Chloro phenyl ketone

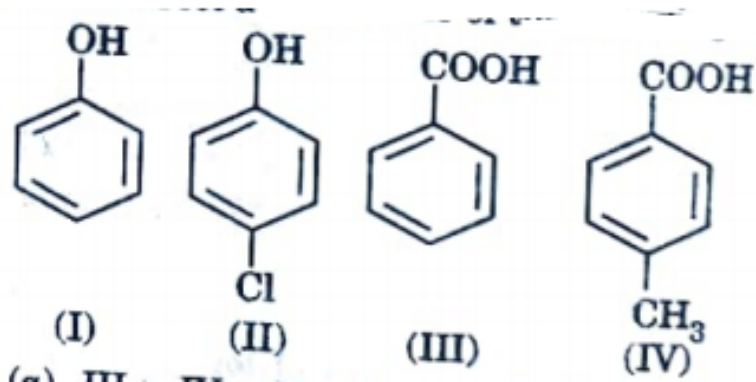
C. Benzenecarbonyl chloride

D. Phenyl chloro ketone

**Answer:**

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684. The correct acidity order of the following is



Answer:



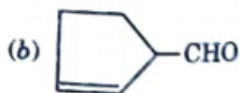
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685. Cyclohexene on ozonolysis followed by reaction with zinc dust and water Gives compound FE. The compound E on further treatment with aqueous KOH yields compound F. Compound F is :

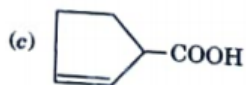
A.



B.



C.



D.



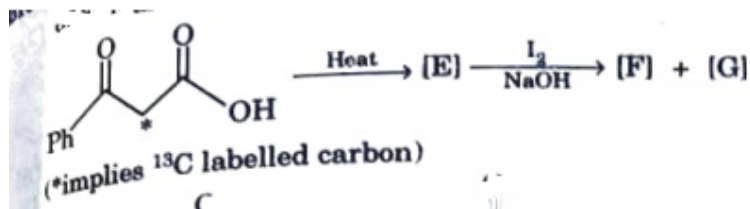


Answer:

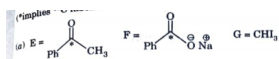
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686. In the following reaction sequence, the correct structures of E, F and

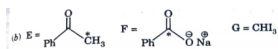
G are



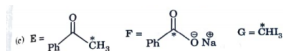
A.



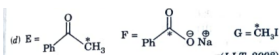
B.



C.



D.



**Answer:**

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687. The major product of the following reaction is



- A. a hemiacetal
- B. an acetal
- C. an ether
- D. an ester

**Answer:**



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688. Among the following compounds, the most acidic is

- A. p-nitrophenol
- B. p-hydroxybenzoic acid
- C. o-hydroxybenzoic acid
- D. p-toluic acid

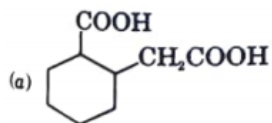
Answer:



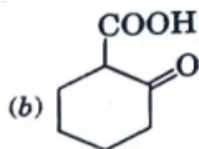
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689. The compound that undergoes decarboxylation most readily under mild condition is

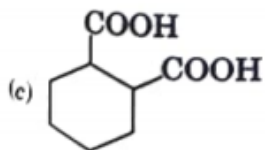
A.



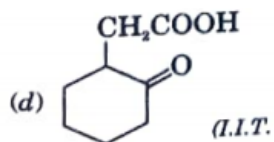
B.



C.



D.



Answer:

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690. The number of aldol reaction(s) that occurs in the given transformation is

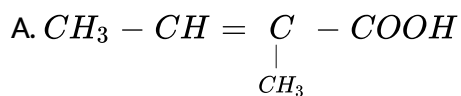
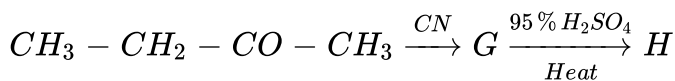


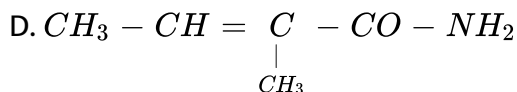
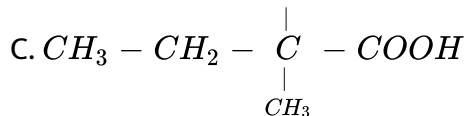
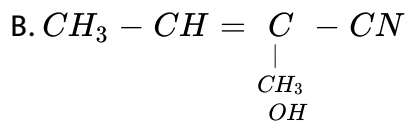
- A. 1
- B. 2
- C. 3
- D. 4

Answer:

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691. The major product H of the given reaction sequence is



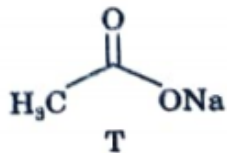
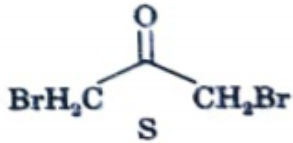
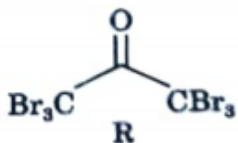
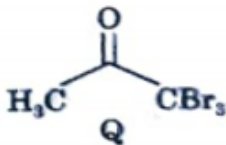
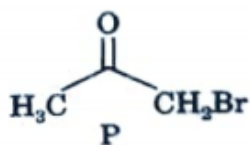
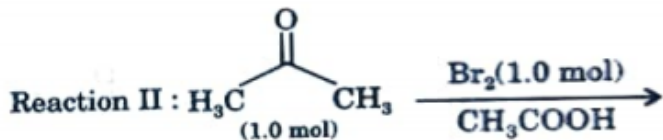
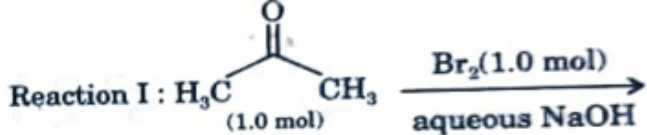


**Answer:**



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**692.** After completion of the reactions (I and II), the organic compound(s) in the reaction mixtures is (are)



- A. Reaction I : P and Reaction II : P
- B. Reaction I : U, acetone and Reaction II : Q, acetone
- C. Reaction I : T, U, acetone and Reaction II : P
- D. Reaction I : R, acetone and Reaction II : S, acetone

Answer:

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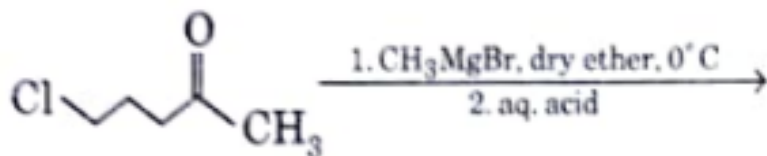
693. The compound that does not liberate  $CO_2$ , on treatment with aqueous sodium bicarbonate solution, is

- A. Benzoic acid
- B. benzenesulphonic acid
- C. salicylic acid
- D. carboic acid (phenol)

Answer:

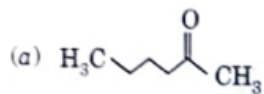
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694. The major product in the following reaction is

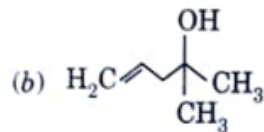




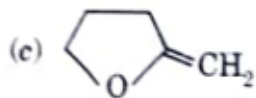
A.



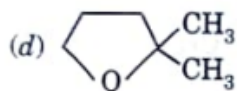
B.



C.



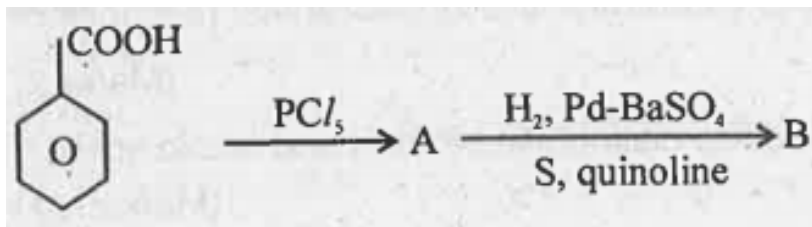
D.



Answer:

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695. Complete the following:

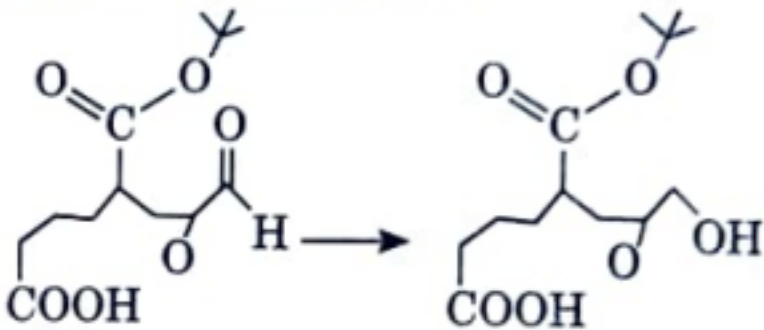


- A.  $\text{C}_6\text{H}_{11}\text{COOH}$
- B.  $\text{C}_6\text{H}_{11}\text{COCl}$
- C.  $\text{C}_6\text{H}_{11}\text{CHO}$
- D.  $\text{C}_6\text{H}_{11}\text{CH}_2\text{OH}$

Answer:

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696. Reagent(s) which can be used to bring about the following transformation is(are)



A.  $LiAlH_4$  in  $(C_2H_5)_2O$

B.  $BH_3$  in THF

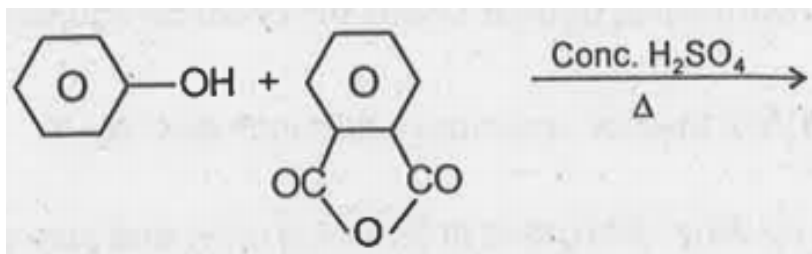
C.  $NaBH_4$  in  $C_2H_5OH$

D. Raney  $Ni / H_2$  in THF.

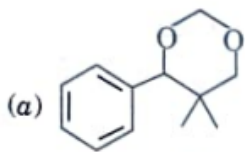
Answer:

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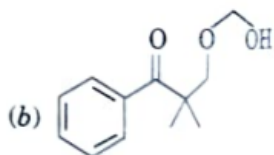
697. Predict the products in the following reaction:



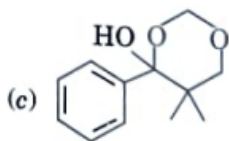
A.



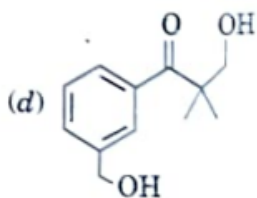
B.



C.



D.



Answer:



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698. The Cannizzaro reaction is given by

- A. benzaldehyde
- B. acetaldehyde
- C. acetone
- D. trimethyl acetaldehyde

**Answer:**



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699. Aldol condensation is not given by

- A. benzo phenone
- B. acetophenone
- C. benzaldehyde

D. propanal

**Answer:**



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**700.** The compounds which give iodoform on treatment with alkali and iodine are

A. propanone

B. acetaldehyde

C. diethyl ketone

D. methanal

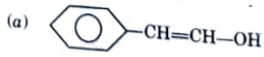
**Answer:**



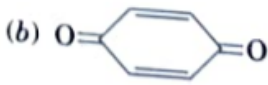
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701. Double fertilization is exhibited by

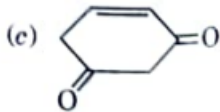
A.



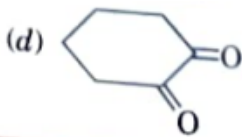
B.



C.



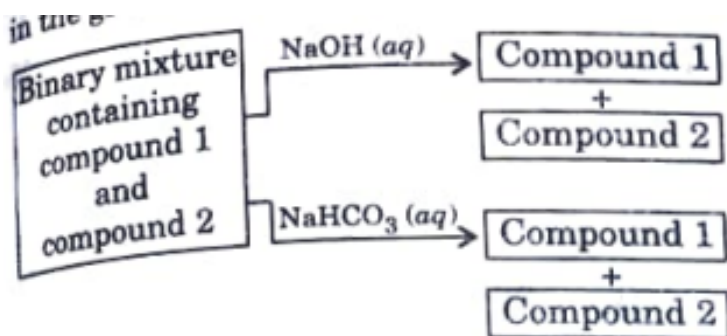
D.



Answer:

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702. Identify the binary mixture(s) that can be separated into individual compounds, by differential extraction, as shown in the given scheme.



- A.  $C_6H_5OH$  and  $C_6H_5COOH$
- B.  $C_6H_5COOH$  and  $C_6H_5CH_2OH$
- C.  $C_6H_5CH_2OH$  and  $C_6H_5OH$
- D.  $C_6H_5CH_2OH$  and  $C_6H_5CH_2COOH$

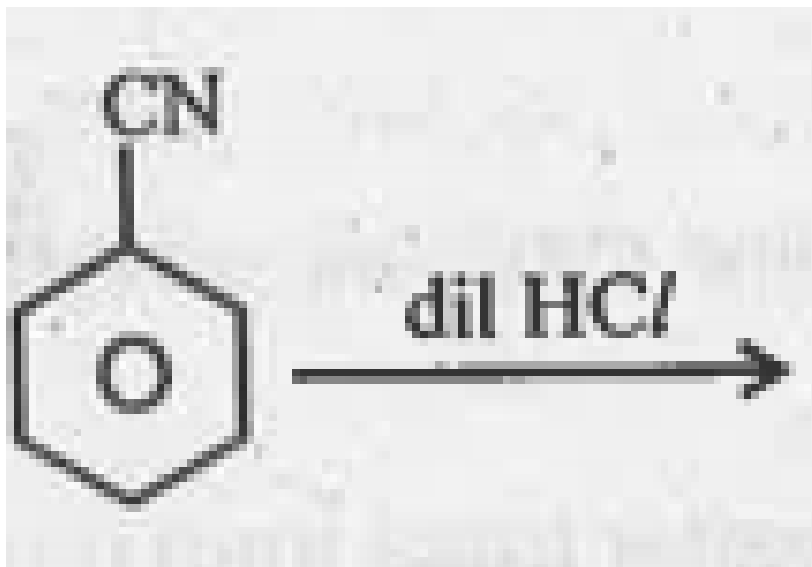
Answer:



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703. Complete the reaction



- A. T is soluble in hot aqueous NaOH.
- B. U is optically active.
- C. Molecular formula of W is  $C_{10}H_{18}O_4$ .
- D. V gives effervescence on treatment with aqueous  $NaHCO_3$

Answer:

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704. Phenol and benzoic acid may be distinguished by their reaction with

- A. aqueous NaOH
- B. aqueous  $NaHCO_3$
- C. neutral  $FeCl_3$
- D. aqueous  $NH_3$

Answer:



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705. Which of the following on oxidation with alkaline  $KMnO_4$  followed by acidification with HCl give benzoic acid ?

- A. Toluene
- B. Ethyl benzene
- C. o-xylene
- D. p-xylene

**Answer:**

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**706.** Which of the following can reduce Fehling's solution ?

- A. Methanal
- B. Methanoic acid
- C. Ethanoic acid
- D. Butanoic acid

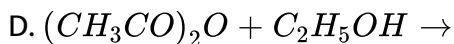
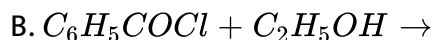
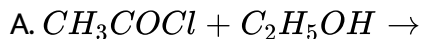
**Answer:**

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**707.** Acetophenone is prepared by

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708. Which of the following reactions will not result in the formation of C - C bond ?



Answer:

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709. Which of the following statements are correct ?

A. p-fluoro benzoic acid is weaker acid than p-chloro benzoic acid.

B. Chloroacetic acid is weaker acid than dichloro acetic acid

C. By passing CO through aqueous NaOH solution at 473 K under 10 atm pressure, formic acid is formed.

D. Calcium acetate on heating gives acetic acid

**Answer:**

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**710.** Amongst the following, homopolymer is:

A. ethyl chloride

B. chlorobenzene

C. benzaldehyde

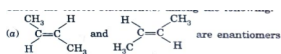
D. salicylic acid

**Answer:**

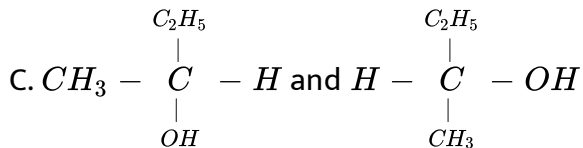
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**711.** Choose the correct statement

A.



B.  $CH_3CHO$  on reaction with HCN gives racemic mixture.



D.  $CH_3 - CH = NOH$  shows geometrical isomerism.

Answer:



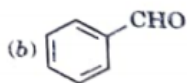
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712. Show that every positive even integer is of the form  $2q$ , for some integer  $q$ .

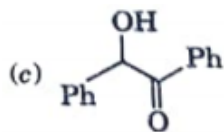
A.



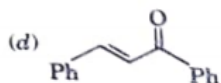
B.



C.



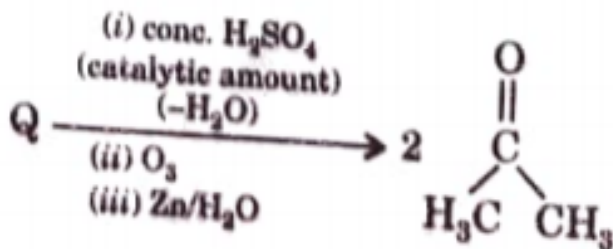
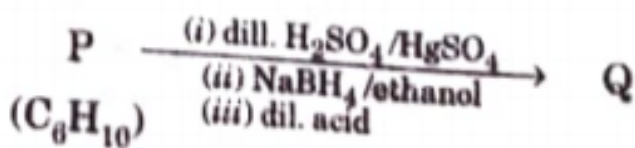
D.



**Answer:**

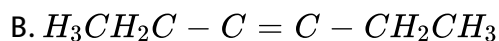
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**713.** An acyclic hydrocarbon P, having molecular formula  $C_6H_{10}$ , gave acetone as the only organic product through the following sequence of reactions, in which Q is an intermediate organic compound.

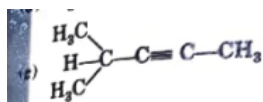


The structure

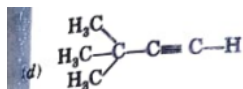
of compound P is



C.



D.



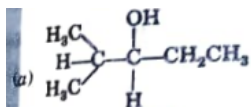
Answer:

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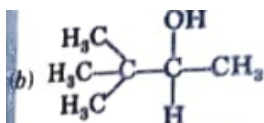


714. The structure of the compound Q is

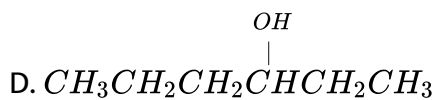
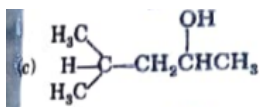
A.



B.



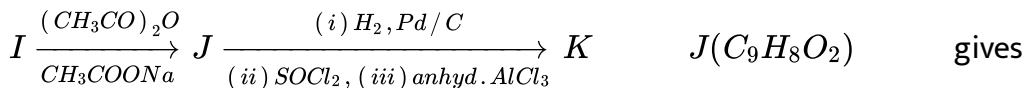
C.



Answer:

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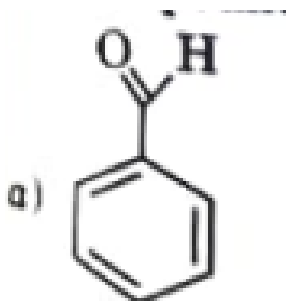
715. In the following reaction sequence, the compound J is intermediate.



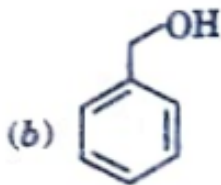
effervescence on treatment with  $\text{NaHCO}_3$  a positive Baeyer's test.

Answer the following (9-10) questions : The compound I is

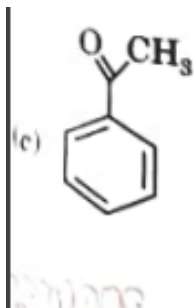
A.



B.



C.



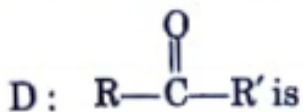
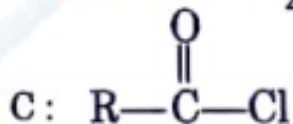
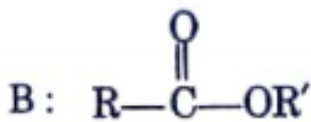
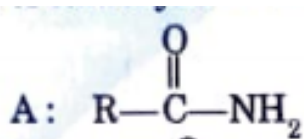
D.



**Answer:**

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**716.** The correct order of reactivity of the following derivatives of carboxylic acids



A.  $A < B > C > D$

B.  $A < B < C < D$

C.  $C > D > B > A$

D.  $D < C < A < B$

**Answer:**

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**717.** Mass cannot be converted into energy.(True/ False)

A. chloride ion is a weaker base than a carboxylate ion

B. chloride ion is a stronger base than a carboxylate ion

C. chloride ion and carboxylate ion have equal basicity

D. acyl chloride is less reactive than carboxylic acid

**Answer:**

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**718.** What happens when methyl chloride is treated with KCN ?

- A. N-methylacetamide and N-ethylacetamide
- B. two molecules of N-ethylacetamide
- C. N-ethylacetamide and N-propylacetamide
- D. N-propylacetamide and N-butylacetamide

**Answer:**

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**719.** Define the terms ' average rate ' and 'instantaneous rate'?

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**720.** Which is correct statement ?

- A. it gives a positive Tollens test and is a functional isomer of X.
- B. it gives a positive Tollens test and is a geometrical isomer of X.
- C. it gives a positive iodoform test and is a functional isomer of X.
- D. it gives a positive iodoform test and is a geometrical isomer of X.

**Answer:**

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**721.** Give chemical equation for the following conversion : Cyclohexanol to cyclohexanone.

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**722.** Assertion : In methanal, all the four atoms are in the same plane.

Reason : The carbon atom in methanal is  $sp^2$  hybridized.

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**723.** Assertion : Benzaldehyde is more reactive than propanal towards nucleophilic addition reactions. Reason: Benzaldehyde is less sterically hindered.

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**724.** Assertion: Acetaldehyde undergoes aldol condensation with dil. NaOH. Reason : Aldehydes which do not contain  $\alpha$ -hydrogen undergo aldol condensation.

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**725.** Would you expect *Benzaldehyde* to be more reactive in nucleophile addition reactions than propanal . Explain?

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**726.** Give chemical reaction of Reimer-Tiemann Reaction?

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**727.** Assertion : The  $pK_a$  of acetic acid is lower than that of phenol.

Reason : Phenoxide ion is more resonance stabilized than acetate ion.

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**728.** Assertion : Benzoic acid and phenol can be distinguished by

$NaHCO_3$ . Reason : Benzoic acid is stronger acid than phenol.

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**729.** Assertion : Fluoroacetic acid is stronger acid than chloroacetic acid.

Reason: due to greater electron donating effect of F than Cl.

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**730.** Assertion : Ethanoic acid liberates hydrogen with sodium metal.

Reason : Sodium is an alkali metal.

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**731.** Assertion : Acetic acid does not undergo haloform reaction. Reason

— : Acetic acid has no  $\alpha$ -hydrogen atom.

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**732.** Assertion: Acetic acid is weaker acid than  $CH_3CH_2COOH$ . Reason :

due to +I effect of methyl group.

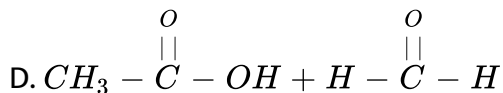
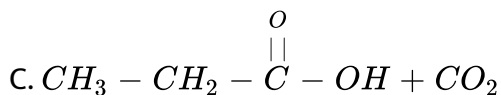
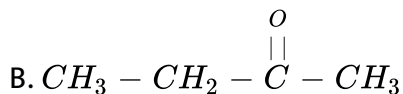
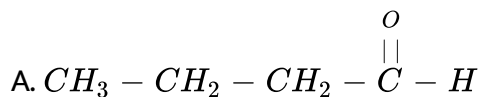
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733. The number of compounds amongst : methanal, benzaldehyde, propanal, propanone, 2, 2-Dimethyl propanal, 3-methylpentanal, which give Cannizzaro's reaction are



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734. Addition of water to alkynes occurs in acidic medium and in 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.



**Answer:**

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**735.** Write the chemical equation for the following conversion :  
Acetaldehyde to butane-1,3-diol .

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**736.** The correct order of acid strength is

- A. Phenol It Ethanol It Chloroacetic acid It Acetic acid
- B. Ethanol It Phenol It Chloroacetic acid It Acetic acid
- C. Ethanol It Phenol It Acetic acid It Chloroacetic acid
- D. Chloroacetic acid It Acetic acid It Phenol It Ethanol

**Answer:**

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737. Compound  $Ph - O - \overset{O}{\parallel} C - Ph$  can be prepared by the reaction of \_\_\_\_\_ .

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738. The reagent which does not react with both, acetone and benzaldehyde .

- A. Sodium hydrogensulphite
- B. Phenyl hydrazine
- C. Fehling's solution
- D. Grignard reagent

**Answer:**

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739. The Cannizzaro reaction is given by

A.



B.



C. HCHO

D.  $CH_3CHO$ .

**Answer:**

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740. Write the iupac name of compound:  $CH_3CCH_3$   
 $\quad\quad\quad ||$   
 $\quad\quad\quad O$

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

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

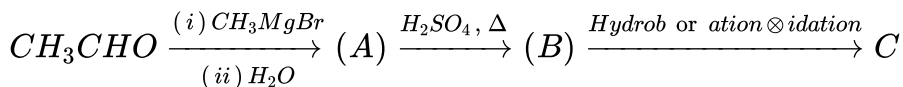
C. Prop-2-en-2-ol, geometrical isomerism

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

**Answer:**

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**741.** Compounds A and C in the following reaction are \_\_\_\_\_ .



A. identical

B. positional isomers

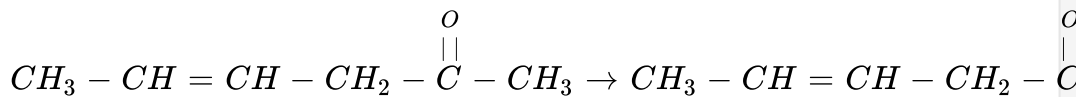
C. functional isomers

D. optical isomers

**Answer:**

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



- A. Tollen's reagent
- B. Benzoyl peroxide
- C.  $\text{I}_2$  and NaOH solution
- D. Sn and NaOH solution

Answer:



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743. Which of the following compounds will give butanone on oxidation with alkaline  $\text{KMnO}_4$  solution?

- A. Butan-1-ol
- B. Butan-2-ol
- C. Both of these

D. None of these

**Answer:**

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**744.** In Clemmensen Reduction carbonyl compound is treated with \_\_\_\_\_.

- A. Zinc amalgam + HCl
- B. Sodium amalgam + HCl
- C. Zinc amalgam + nitric acid
- D. Sodium amalgam +  $HNO_3$

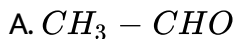
**Answer:**

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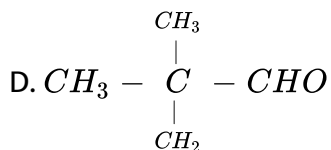
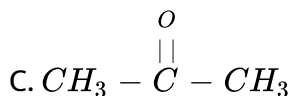


745. In the following questions two or more options may be correct.

Which of the following compounds do not undergo aldol condensation?



B.



**Answer:**

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746. Treatment of compound  $Ph - O - \overset{O}{\parallel} C - Ph$  with NaOH solution yields

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**747.** what is Clemmensen Reduction?

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**748.** Through which reaction number of carbon atoms can be increased in the chain?

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**749.** Benzophenone can be obtained by ,

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**750.** In the following questions a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices. (a) Assertion and reason both are correct and reason is

correct explanation of assertion. : (b) Assertion and reason both are wrong statements. (c) Assertion is correct statement but reason is wrong statement. (d) Assertion is wrong statement but reason is correct statement. (e) Assertion and reason both are correct statements but reason is not correct explanation of assertion. Assertion : Formaldehyde is a planar molecule. Reason : It contains  $sp^2$  hybridised carbon atom.

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**751.** Carboxylic acids are reduced to alkanes /alcohols with HI, red P.

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**752.** Assertion : The  $\alpha$ -hydrogen atom in carbonyl compounds is less acidic. Reason : The anion formed after the loss of  $\alpha$ -hydrogen atom is resonance stabilised.

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753. Convert Acetyldehyde to isopropyl alcohol.

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754. Conversion of Semicarbazide to Semicarbazone.

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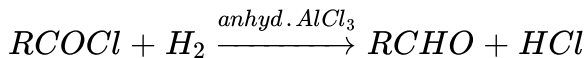
755. Convert Ethyl alcohol to Acetaldehyde.

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756. Arrange the following compounds in the increasing order of boiling points :  $C_2H_5OC_2H_5$ ,  $C_4H_{10}$ ,  $C_4H_9OH$

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757. What is the name of the following reaction?



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758. Draw the structures of hex-2-en-4-ynoic acid.

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759. How will you convert the following to benzoic acid?

Ethylbenzene .

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760. How will you convert the following to benzoic acid?

Bromobenzene.

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**761.** Write the product formed by the aldol condensation of the following : propanal.

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**762.** Write the structures of the products formed by the aldol condensation of the following : Acetaldehyde.

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**763.** Benzoic acid is stronger acid than acetic acid. Justify.

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**764.** Explain the following : Chloroacetic acid is stronger acid than acetic acid.

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**765.** Write the name of the reagent to bring about the following conversion : Ethane nitrile to ethanal .



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**766.** Write the name of the reagent to bring about the following conversion : Ethane nitrile to ethanal .



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**767.** Give plausible explanation for of the following : There are two  $-NH_2$  groups in semicarbazide. However, only one is involved in the formation of semicarbazones.



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768. Illustrate the following named reaction by giving example :

Clemmensen reduction.

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769. Explain:

Cannizzaro's reaction.

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770. Write Wolff Kishner reduction.

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771. Complete the following reaction :  $C_6H_5CHO \xrightarrow{H_2NCONHNH_2}$

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772. Complete the following reaction :  $CH_3COCH_2COOC_2H_5 \xrightarrow[H^+]{NaBH_4}$

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773. Give chemical tests to distinguish between the following pairs :

Pentan -2-one and pentan -3-one

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774. Give chemical tests to distinguish between the following pair of compounds : Benzoic acid and phenol.

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775. Give chemical test to distinguish between the following : Phenol and cyclohexanol.

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**776.** An organic compound A has molecular formula  $C_8H_{16}O_2$ . It gets hydrolysed with dil.  $H_2SO_4$  and gives a carboxylic acid B and an alcohol C. Oxidation of C with chromic acid also produced B. C on dehydration gives but-1-ene. Write equations for the reactions involved.

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**777.** How will you convert acetic acid into : acetamide .

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**778.** How will you convert acetic acid into : acetyl chloride .

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**779.** How will you convert acetic acid into : ethyl acetate.

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**780.** An organic compound A with molecular formula  $C_8H_8O$  gives positive DNP and iodoform tests. It does not reduce Tollen's or Fehling's reagent and does not decolourise bromine water also. On oxidation with chromic acid ( $H_2CrO_4$ ), it gives a carboxy acid (B) with molecular formula  $C_7H_6O_2$ . Deduce the structure of A and B.

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**781.** Arrange the following carbonyl compounds in the increasing order of their reactivity in nucleophilic addition reactions : Ethanal, Propanal, Propanone, butanone .

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**782.** Although p-hydroxy benzoic acid is less acidic than benzoic acid, ortho hydroxy benzoic acid (salicylic acid) is about 15 times more acidic

than benzoic acid. Explain.



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