



CHEMISTRY

BOOKS - JMD CHEMISTRY (PUNJABI ENGLISH)

ORGANIC COMPOUNDS WITH FUNCTIONAL GROUP CONTAINING OXYGEN - II



1. Which of the following method is used to

convert Ketone into hydrocarbon ?

A. Aldol Condensation

B. Reimer tiemann reaction

C. Cannizzaro reaction

D. Wolff-Kishner reaction

Answer: D

2. Explain Rosenmund's reduction with an

example.

A. $HgSO_4$

B. anhydrous

 $AlCl_3$

C. anhydrous

 $ZnCl_2$

D. $Pd/BaSO_4$

Answer: B

3. Formaldehyde reacts with

 NH_3

to give

A. hexamethylenetetramine

B. formaldehyde ammonia

C. formalin

D. hydrobenzamide







4. Which type of isomerism is shown by pentanone ?

A. chain isomerism

B. position isomerism

C. functional isomerism

D. All of these

Answer: D

5. The compound X on treatment with acidified $K_2 C r_2 O_7$ gives compound Y which reacts with I_2 and $Na_2 CO_3$

to form tri-iodomethane. The compound X is :

A. CH_3OH

B. CH_3COCH_3

 $\mathsf{C.}\,CH_3CHO$

D. $CH_3CHOHCH_3$

Answer: D



6. Which compound undergoes iodoform reaction ?

A. HCHO

B. CH_3CHO

 $\mathsf{C.}\,CH_3OH$

D. CH_3COOH

Answer: B





7. Which of the following gives iodoform on heating with a solution of

 I_2 containing

 Na_2CO_3 ?

A. Ethyl alcohol

B. Acetone

C. Ethyl alcohol as well as Acetone

D. Methyl alcohol

Answer: B



- 8. Which of the following compounds will give
- a yellow precipitate with iodine and alkali?
 - A. 2-Hydroxy propanal
 - B. Acetophenone
 - C. Both
 - D. None

Answer: B



benzaldehyde by

A. Fitting's reaction

B. Cannizzaro's reaction

C. Kolbe's reaction

D. Reduction with LAH





10. A compound that gives positive iodoform test Is :

- A. Pentan-1-ol
- B. Pentan-2-one
- C. Pentan-3-one
- D. Pentanal





11. formaldehyde when treated with conc.KOH gives

- A. CH_3CHO
- $\mathsf{B.}\, C_2 H_4$
- С. CH_3OH ,НСООК
- D. CH_3OH , CH_3CHO





12. Which of the following does not give brick red ppt. with fehling solution ?

A. Formalin

B. Aceteldehyde

C. D-Flucose

D. Acetone

Answer: D



13. Which of the following reactants in presence of

 $AlCl_3$ gives acetophenone ?

A. Benzene and acetone

B. phenol and acetone

C. phenol and AcOH

D. Benzene and AcCl

Answer: D



14. The ease of esterification of the following acids (i) HCOOH (II) CH_3COOH (III) CH_3CH_2COOH With CH_3OH IS :

A. (III) > (II)> (I)

B. (I) >(II) > (III)

C. (II)>(I) > (III)

D.(I) = (II) = (III)

Answer: A

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15. Which is most acidic?

- A. 0-Nitrobenzoic acid
- B. m-Nitrobenzoic acid
- C. p-Nitrobenzoic acid
- D. p- Nitrophenol





16. Which has the maximum acidic strength ?

A. O-Nitrobenzoic acid

B. m-Nitrobenzoic acid

C. p-Nitrobenzoic acid

D. p- Nitrophenol

Answer: A



17. The reaction of HCOOH with

conc. H_2SO_4 gives

A. CO_2

В. *СО*

C. Oxalic acid

D. Acetic acid

Answer: B





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

A. Tollen's reagent

B. Mercuric acid

C. Potassium permanganate

D. All

Answer: D





19. Between

CH_3COOH and HCOOH, HCOOH will be

A. Less acidic

B. Equally acidic

C. More acidic

D. None

Answer: C

20. Which acid is strongest ?

A. $Cl_3 \mathbb{C}OOH$

B. Cl_2HCOOH

 $\mathsf{C.}\, ClCH_2COOH$

 $\mathsf{D.}\, CH_3 COOH$

Answer: A

21. The weakest acid among the following is :

A. CH_3CH_2COOH

B. CH_3COOH

 $\mathsf{C.}\, ClCH_2COOH$

D. Cl_3COOH

Answer: A



22. Which does not have a carboxyl group ?

A. Benzoic acid

B. Ethanoic acid

C. Picric acid

D. Aspirin

Answer: C

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23. Freshly prepared ammonical silver nitrate

solution is known as

- A. Tollen's reagent
- B. Baker's reagent
- C. Fehling solution
- D. Liquid ammonia

Answer: A

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24. IUPAC name of oxalic acid is :

A. Hexane-1 ,2-dioic acid

- B. Ethane-1, 2-dioic acid
- C. Ethanoic acid
- D. Butane-1, 2-dioic acid

Answer: B

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25. Formalin is a 40% aqueous solution of :

Methanol, Ethanol, Methanal, Ethanal.

A. Methanol

B. Ethanol

C. Methanal

D. Ethanal

Answer: C

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26. IUPAC name of acetic acid is :

A. Ethanoic acid

B. Methanoic acid

C. Propanoic acid

D. Butanoic acid

Answer: A



27. IUPAC name of formic acid is:

- A. Methanoic acid
- B. Ethanoic acid
- C. Ethanedioic acid

D. Methanedioic acid

Answer: A

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28. When ethanal is heated with Fehling's solution, it gives a precipitate of :

A. Cu

B. CuO

 $\mathsf{C}. Cu_2O$

D. $Cu + Cu_2O + CuO$

Answer: C

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29. The reagent which can be used to distinguish acetophenone from benzophenone is :

A. 2, 4-Dinitrophenyl hydrazine

B. Benedict's solution

C. Tollen's reagent

D. I_2 and Na_2CO_3

Answer: D



30. CH_3CHO and $C_6H_5CH_2CHO$ can be

distinguised chemically by :

A. Benedict's test

B. lodofrom test

C. Tollen's reagent test

D. Fehling's solution test

Answer: B

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31. Common name of pentanal is ------.

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32. IUPAC name of acrolein is prop-2-enal.



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34. Oxidation of a

1° alcohol with PCC gives an aldehyde.

35. Oxidation of a

 1° alcohol with chromic anhydride gives a

ketone.



36. Oxidation of methylbenzene with acidified

 $KMnO_4$ gives benzaldehyde.

37. oxidation of toluene with chromyl chloride

followed by hydrolysis gives benzaldehyde.



38. Benzaldehyde can be prepared by the hydrolysis of benzal chloride.



39. Hydration of an alkyne to get an aldehyde or ketone is possible in the presence of Hg^{2+} ions and H_2SO_4



40. Methanal is a highly pungent gas at room

temperature

41. Carbonyl compounds undergo electrophilic

additon reactions

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42. Aldehyde group is o, p-directing and activating in electrophilic substituion reactions of aromatic aldehydes.


44. What is catalytic dehydrogenation of

alcohols ?



45. Reduction of an aldehyde with H_2 /Pd gives a 1° alcohol. Watch Video Solution

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

47. Write Wolff Kishner reduction.



48. Ketones can not be easily oxidised with mild oxidising agents like Tollen's reagent of Fehling's solution.



49. Give the chemistry of silver mirror test or

Tollen's test

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50. How does > C= C < differ from >C =O group

in chemical reactions ?

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51. Write the IUPAC name of salicylaldehyde



54. What are Etard reaction?



55. Explain the following reaction reaction :

Friedal Craft acylation.

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56. Write Gatterman Koch reaction

57. Aldehydes and ketones have lower boiling points than corresponding alcohols and acids. Explain.

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58. Why do aldehydes and ketones have high

dipole moments?

59. Discuss the nature of C-O Bond in carbonyl

compounds.

C	Watch	Video	Solutio	on	

60. Ketones have higher boiling than aldehydes.Explain.

61. Aromatic aldehydes and ketones are less

reactive than correspondingAliphatic

compounds. Explain.



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



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

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64. Write Clemmensen reduction.

65. Why do aldehydes and ketones undergo

nucleophilic addition reaction?

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66. Give Aldol condensation reaction of acetaldehyde and explain why formaldehyde does not give this reaction.

67. Write cross aldol condensation.





72. What isTollen's reagent ?



73. Give a chemical test to distinguish between

aldehyde and ketones

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74. Give the chemistry of silver mirror test or

Tollen's test



75. How will you distinguish between acetaldehyde and acetone ?

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76. What happens when Formaldehyde is

treated with ammonia ?



79. Give one chemical test of distinguish
between Pentanone-2 and Pentanone-3.
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80. How will you distinguish:

Benzaldehyde and acetophenone

81. Give simple chemical tests to distinguish

between the following pairs of compounds

Ethanal and propanal



82. How will youdistinguish between

benzaldehyde andacetaldehyde?

83. What is formalin solution ? Give its one

use..



85. How will you convert acetylene into acetic

acid ?



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

?



87. Why is acetic acid weaker than formic acid ?

88. Ethanoic acid is weaker acid than benzoic

acid.Why?



89. Why aliphatic carboxylic acids are stronger

than phenols?

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



91. Chloroacetic acid
$$\begin{pmatrix} Cl - CH_2 - ig|_C^O - OH \end{pmatrix}$$
 is stronger than

acetic acid CH_3COOH . Explain.



92. Write HVZ reaction.



94. Write a short note on Kolbe's electrolysis

reaction.





95. In the preparation of ester by reaction of carboxylic acid and an alcohol, the ester is distilled as fast as it is formed. Explain why ?

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96. Write a chemical test to distinguish

between phenol and benzoic acid.

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

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98. Give simple chemical tests to distinguish between following pair of compounds :

Formic acid and acetic acid.

99. Give simple chemical tests to distinguish

between following pair of compounds :

Ethanol and acetic acid.



100. Which of the following method is used to

convert Ketone into hydrocarbon?

A. Aldol Condensation

B. Reimer tiemann reaction

C. Cannizzaro reaction

D. Wolff-Kishner reaction

Answer: D



101. Explain Rosenmund's reduction with an example.

A. $HgSO_4$

B. anhydrous

 $AlCl_3$

C. anhydrous

 $ZnCl_2$

D. $Pd/BaSO_4$

Answer: B

102. Formaldehyde reacts with

 NH_3

to give

A. hexamethylenetetramine

B. formaldehyde ammonia

C. formalin

D. hydrobenzamide

Answer: A

103. Which type of isomerism is shown by pentanone ?

A. chain isomerism

B. position isomerism

C. functional isomerism

D. All of these

Answer: D

104. The compound X on treatment with acidified

 $K_2 C r_2 O_7$ gives compound Y which reacts with

 I_2 and Na_2CO_3

to form tri-iodomethane. The compound X is :

A. CH_3OH

B. CH_3COCH_3

 $\mathsf{C.}\,CH_3CHO$

D. $CH_3CHOHCH_3$

Answer: D





105. Which compound undergoes iodoform reaction ?

A. HCHO

B. CH_3CHO

 $\mathsf{C.}\,CH_3OH$

D. CH_3COOH

Answer: B

106. Which of the following gives iodoform on

heating with a solution of

 I_2 containing

 Na_2CO_3 ?

A. Ethyl alcohol

B. Acetone

C. Ethyl alcohol as well as Acetone

D. Methyl alcohol

Answer: B



107. Which of the following compounds will give a yellow precipitate with iodine and alkali ?

- A. 2-Hydroxy propane
- B. Acetophenone
- C. Both
- D. None

Answer: B



108. Benzyl alcohol is obtained from benzaldehyde by

A. Fitting's reaction

B. Cannizzaro's reaction

C. Kolbe's reaction

D. Reduction with LAH

Answer: B





109. A compound that gives positive iodoform

test ls :

- A. Pentan-1-ol
- B. Pentan-2-one
- C. Pentan-3-one
- D. Pentanal

Answer: B
110. formaldehyde when treated with conc.KOH gives

A. CH_3CHO

 $\mathsf{B.}\, C_2 H_4$

С. CH_3OH ,НСООК

D. CH_3OH , CH_3CHO

Answer: C

111. Which of the following does not give brick

red ppt. with fehling solution ?

A. Formalin

B. Aceteldehyde

C. D-Flucose

D. Acetone

Answer: D

112. Which of the following reactants in

presence of

 $AlCl_3$ gives acetophenone ?

A. Benzene and acetone

B. phenol and acetone

C. phenol and AcOH

D. Benzene and AcCl

Answer: D

113. The ease of esterification of the following acids (i) HCOOH (II) CH_3COOH (III) CH_3CH_2COOH With CH_3OH IS :

A. (III) It (II) It (I)

B. (I) lt (II) lt (III)

C. (II) It (I) It (III)

D.(I) = (II) = (III)

Answer: A

114. Which has the maximum acidic strength?

A. 0-Nitrobenzoic acid

B. m-Nitrobenzoic acid

C. p-Nitrobenzoic acid

D. p- Nitrophenol

Answer: A

115. Which has the maximum acidic strength ?

A. 0-Nitrobenzoic acid

B. m-Nitrobenzoic acid

C. p-Nitrobenzoic acid

D. p- Nitrophenol

Answer: A

116. The reaction of HCOOH with

conc. H_2SO_4 gives

A. CO_2

 $\mathsf{B.}\,CO$

C. Oxalic acid

D. Acetic acid

Answer: B

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

A. Tollen's reagent

B. Mercuric acid

C. Potassium permanganate

D. All

Answer: D

118. Between

CH_3COOH and HCOOH, HCOOH will be

A. Less acidic

B. Equally acidic

C. More acidic

D. None

Answer: C

119. Which acid is strongest ?

A. $Cl_3 \mathbb{C}OOH$

$\mathsf{B.}\,Cl_2HCOOH$

 $\mathsf{C.} ClCH_2COOH$

 $\mathsf{D.}\, CH_3COOH$

Answer: A

120. The weakest acid among the following is :

A. CH_3CH_2COOH

B. CH_3COOH

 $\mathsf{C.}\, ClCH_2COOH$

D. Cl_3COOH

Answer: A

121. Which does not have a carboxyl group ?

A. Benzoic acid

B. Ethanoic acid

C. Pieric acid

D. Aspirin

Answer: C

122. Freshly prepared ammonical silver nitrate

solution is known as

A. Tollen's reagent

B. Baker's reagent

C. Fehling solution

D. Liquid ammonia

Answer: A

123. IUPAC name of oxalic acid is :

A. Hexane-1 ,2-dioic acid

B. Ethane-1, 2-dioic acid

C. Ethanoic acid

D. Butane-1, 2-dioic acid

Answer: B

124. Formalin is a 40% aqueous solution of : Methanol, Ethanol, Methanal, Ethanal.

A. Methanol

B. Ethanol

C. Methanal

D. Ethanal

Answer: C

125. IUPAC name of acetic acid is :

A. Ethanoic acid

B. Methanoic acid

C. Propanoic acid

D. Butanoic acid

Answer: A



126. IUPAC name of formic acid is:

- A. Methanoic acid
- B. Ethanoic acid
- C. Ethanedioic acid
- D. Methanedioic acid

Answer: A



127. When ethanal is heated with Fehling's solution, it gives a precipitate of :

A. Cu

B. CuO

$\mathsf{C}.\, Cu_2O$

D. $Cu + Cu_2O + CuO$

Answer: C

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128. The reagent which can be used to distinguish acetophenone from benzophenone is :

- A. 2, 4-Dinitrophenyl hydrazine
- B. Benedict's solution
- C. Tollen's reagent
- D. I_2 and Na_2CO_3

Answer: D



129. CH_3CHO and $C_6H_5CH_2CHO$ can be

distinguised chemically by :

A. Benedict's test

B. lodofrom test

C. Tollen's reagent test

D. Fehling's solution test

Answer: B

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130. Common name of pentanal is -----.

131. IUPAC name of acrolein is prop-2-enal.



132. '1^@` alcohol on dehydrogenation with a

heavy metal catalyst (Cu or Ag) gives a Ketone.

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133. Oxidation of a

 1° alcohol with PCC gives an aldehyde.



ketone.



135. Oxidation of methylbenzene with acidified

 $KMnO_4$ gives benzaldehyde.

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followed by hydrolysis gives benzaldehyde.



137. Benzaldehyde can be prepared by the

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or ketone is possible in the presence of

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139. Methanal is a highly pungent gas at room

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140.Carbonylcompoundsundergoelectrophilic additon reactionsImage: Watch Video Solution

141. Aldehyde group is o, p-directing and activating in electrophilic substituion reactions of aromatic aldehydes.



143. Catalytic hydrogenation of ketones gives

2° alcohol



144. Reduction of aldehydes with

 $Lia1H_4$ or $NaBH_4$ GIVES 1° alcohol

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

 146.
 Wolff-kishner
 reduction
 reduces

 aldehydes and ketones to hydrocarbons

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



149. How does > C= C < differ from >C =O group

in chemical reactions ?

150. Write the IUPAC name of salicylaldehyde



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Friedel craft's Acylation reaction.

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156. Aldehydes and ketones have lower boiling points than corresponding alcohols and acids. Explain.



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dipole moments?

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

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aldehydes.Explain.

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reactive than correspondingAliphatic

compounds. Explain.



161. Explain why aldehydes are more reactive

than ketones towards nucleophilic addition

reactions ?



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

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163. Explain:

Clemmensen reduction

164. Why do aldehydes and ketones undergo nucleophillic addition recations ? Give two example each



165. Give Aldol condensation reaction of acetaldehyde and explain why formaldehyde

does not give this reaction.


166. Write cross aldol condensation.





171. What isTollen's reagent ?





172. Give a chemical test to distinguish

between aldehyde and ketones

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173. Give the chemistry of silver mirror test or

Tollen's test

174. How will you distinguish between:

 CH_3CHO (acetaldehyde or propanal) and

 CH_3COCH_3 (acetone or propanone)



175. What happens when Formaldehyde is

treated with ammonia ?

176. Give simple chemical tests to distinguish between the following pairs of compounds mathanal (formaldehyde) and Ethanal (acetaldehyde)

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177. Give simple chemical tests to distinguish

between the following pairs of compounds

Acetophenone and Benzophenone

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179. How will you distinguish:

Benzaldehyde and acetophenone

180. Give simple chemical tests to distinguish between the following pairs of compounds Ethanal and propanal Watch Video Solution How will youdistinguish between 181. benzaldehyde andacetaldehyde? Watch Video Solution

182. What is formalin solution ? Give its one

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184. How will you convert acetylene into acetic

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

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188. Why aliphatic carboxylic acids are stronger than phenols?

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



190. Chloroacetic acid
$$\left(Cl - CH_2 - \bigcup_{C}^{O} - OH\right)$$
 is stronger than

acetic acid CH_3COOH . Explain.



191. Write HVZ reaction.



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193. Give a reaction in each case to illustrate

the following Kolbe's electrolysis.





194. In the preparation of ester by reaction of carboxylic acid and an alcohol, the ester is distilled as fast as it is formed. Explain why ?

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195. Write a chemical test to distinguish

between phenol and benzoic acid.

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

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197. Give simple chemical tests to distinguish

between following pair of compounds :

Formic acid and acetic acid.

198. Give simple chemical tests to distinguish

between following pair of compounds :

Ethanol and acetic acid.

