



# CHEMISTRY

# **BOOKS - TARGET CHEMISTRY (HINGLISH)**

# ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

**Classical Thinking** 

**1.** Which of the following funtional groups is common to aldehydes , ketones and carboxylic acids ?

A. -CHO

В. 📄

C. -COO -

D.  $CH_2$ 

Answer: B

2. Which of the following statements is CORRECT about carboxyl group ?

A. The carbonyl cabon is sp hybridized.

- B. The carbonyl carbon is  $sp^3$  hybridized.
- C. The three groups attached to the carbonyl carbon lie in the same

plane.

D. The three groups attached to the carbonyl carbon lie in the different planes.

#### Answer: C



3. Aldehydes are the first oxidation product of :

A. any type of alcohol

B. tertiary alcohols

C. primary alcohols

D. secondary alcohols

# Answer: C

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4. Aldehyde functional group can occur :

A. any where in the carbon chain

B. in the middle of the carbon chain

C. only at the second carbon atom of the chain

D. only at the terminal carbon of the chain

# Answer: D

**5.** The compound  $CH_3CHO$  is \_\_\_\_\_.

A. acetaldehyde

B. acetic acid

C. acetal

D. acetone

Answer: A

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6. 
$$H_3C - \underset{\substack{||\\O}}{C} - CH_2 - CH_3$$
 is a/an\_\_\_\_\_.

A. symmetrical ketone

B. unsymmetrical ketone

C. ester

D. aldehyde

# Answer: B

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<b>7.</b> $\alpha$ -carbon is that carbon atom
A. which has functional group
B. which is attached to functional carbon atom
C. which has 2 alkyl groups
D. which is attached to four different groups
Answer: B
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**8.** Number of  $\alpha - H$  atoms in propionaldehyde is/are\_\_\_\_\_.

A. one

B. two

C. three

D. four

Answer: B

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9. Common name of  $CH_3 - CH_2 - CO - CH(CH_3)_2$  is \_\_\_\_\_.

A. ethyl isopropyl ketone

B. isopentyl ketone

C. ethyl propyl ketone

D. propyl ethyl ketone

Answer: A

<b>10.</b> According th IUPAC system, acetaldehyde is called as
A. methanal
B. ethanone
C. propanal
D. ethanal

## Answer: D

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11. According to IUPAC system, dimethyl ketone is known as \_\_\_\_\_.

A. acetone

B. ethanone

C. ethanal

D. propanone

# Answer: D

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<b>12.</b> IUPAC name of $CH_3CH_2COCH_3$ is
A. butan-2-al
B. butan-1-al
C. butan-1-one
D. butan-2-one
Answer: D

**13.** According to IUPAC system, dimethyl ketone is known as \_\_\_\_\_\_.

A. butanone

B. pentan-2-one

C. pentan-3-one

D. butan-2-one

Answer: C

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14. Methyl n-propyl ketone has IUPAC nomenclature as \_\_\_\_\_.

A. pentan-2-one

B. butan-2-one

C. pentan-3-one

D. butan-3one

Answer: A

**15.** The IUPAC name of  $\alpha$ -methyl butyraldehyde is \_\_\_\_\_.

A. pentanal

B. 3-methylbutanal

C. 2-methylbutanal

D. methylbutanal

# Answer: C

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16. Formaldehyde is obtained on a commercial scale by the oxidation of

A. methanol

B. ethanol

C. ethylene

D. formic acid

# Answer: A



17. Which of the following compounds on alkaline hydrolysis gives ketone

?

A. Vicinal dihalide

B. terminal geminal dihalide

C. Non-terminal geminal dihalide

D. Non-terminal vicinal dihalide

# Answer: C



18. The compound that yields only ketonic compounds on ozonolysis is

A. but-2-ene

B. pent-2-ene

C. 2,3-dimethylbut-2-ene

D. 2-methylbut-2-ene

Answer: C

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**19.** Acetaldehyde is formed by the hydration of \_\_\_\_\_.

A. methanol

B. methyl cyanide

C. acetylene

D. ethylene

Answer: C

**20.** Propyne is treated with aqueous  $H_2SO_4$  in the presence of  $HgSO_4$ .

The product formed is

A. propanal

B. ethyl hydrogen sulphate

C. acetone

D. acetaldehyde

# Answer: C

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**21.** 
$$(HCOO)_2Ca \xrightarrow{\Delta} A + B$$
 . Compounds A and B are \_\_\_\_\_ respectively.

A. acetaldehyde and calcium carbonate

B. formaldehyde and calcium carbonate

C. acetyldehyde and calcium hydroxide

D. formaldehyde and carbon dioxide

#### Answer: B

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**22.** A reagent that is required to convert methyl cyanide into acetaldehyde is \_\_\_\_\_.

A. ethyl magnesium chloride

B. methyl magnesium chloride

C. acetyl chloride

D.  $SnCl_2 / HCl$ 

# Answer: D

23. The reagent used in Gattermann -Koch aldehyde synthesis is

A.  $Pd \, / \, BaSO_4$  ,quinoline

B. alkaline  $KMnO_4$ 

C. acidic  $KMnO_4$ 

 $D.C0 + HCl/AlCl_3$ 

#### Answer: D

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**24.** The product of the reaction between diethylcadmium and acetyl chloride is \_\_\_\_\_\_.

A.  $CH_3COCH_3$ 

 $\mathsf{B.}\, C_2H_5COC_2H_5$ 

 $\mathsf{C.}\,C_2H_5COCH_3$ 

D.  $CH_3COC_2H_5$ 

# Answer: D



25. Acetyldehyde is NOT obtained in which of the following reactions ?

Quinoline

#### Answer: A



26. Which of the following will be in gaseous state, if room temperature is

 $25\,^\circ C$  ?

A. Formaldehyde

B. Butanone

C. Acetone

D. Formalin

Answer: A

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27. Formalin is:

A. 40% formic acid

B. 40% formaldehyde

C. 10% formic acid

D. 10% formal dehyde

#### Answer: B



**28.** Which aldehyde is insoluble in  $H_2$ O -

A. propanal

B. Ethanal

C. Butanal

D. Heptanal

Answer: D

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**29.** Which of the following is the mechanism of reactions of carbonyl compounds ?

A. Nucleophilic substitution

B. Electrophilic substitution

C. Nucleophilic addition

D. Electrophilic addition

# Answer: C

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30. Acetaldehyde and acetone react with HCN to form corresponding

A. cyanides

**B.** nitriles

C. cyanohydrins

D. hydrides

Answer: C

**31.** Which of the following will give the addition product with  $NaHSO_3$ ?

A.  $CH_3OH$ 

 $\mathsf{B.}\, CH_3COOH$ 

C.  $CH_3COCH_3$ 

 $\mathsf{D.}\, CH_3 CH_2 Cl$ 

Answer: C

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32. When acetone reacts with ammonia at room temperature , it gives

A. triacetone amine

B. diacetone amine

C. methyl tetramine

D. acetaldehyde

# Answer: B



**33.** The main product formed when acetaldehyde is treated with phenylhydrazine is\_\_\_\_\_.

A.  $CH_3CH_2NHC_6H_4NH_2$ 

 $\mathsf{B.}\,CH_3CH=N-NH-C_6H_5$ 

 $\mathsf{C.}\,H_2NCH_2CH_2CH_2C_6H_4NH_2$ 

D.  $CH_3CH = N - CH_2 - C_6H_5$ 

#### Answer: B



34. Ethane can be obtained from acetaldehyde in one step by\_\_\_\_\_.

A. Na-Hg+water

B. Zn-Hg+conc. HCl

C. acidified  $K_2 C r_2 O_7$ 

D.  $LiAlH_4$  +ether

Answer: B

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35. Ehtyl methyl ketone can be reduced to n-butane by \_\_\_\_\_.

A. Etard reaction

B. Wolff-Kishner reduction

C. Stephen reaction

D. Friedel-Craft acylation

Answer: B

**36.** Conversion of acetone into 2,3-dimethylbutane-2,3-diol can be achieved by \_\_\_\_\_\_.

A. Zn-Hg/Hcl

B. Wolff-Kishner reduction

C. Fe/Hg/ $H_2O$ 

D.  $Mg/C_{6}H_{6}/{
m dil.HCl}$ 

Answer: D

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37. Which of the following compounds will NOT give the positive test for

Tollen's reagent ?

A. Propanone

**B.** Propanal

C. ethanal

D. Both (B) and (C)

Answer: A

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38. Acetaldehyde on warming with Fehling solution gives a red precipitate

of \_\_\_\_\_.

A. elemental copper

B. cuprous oxide

C. cupric oxide

D. mixture of all of the above

Answer: B

39. Which of the following does not turn Schiff's reagent to pink?

A. Formaldehyde

**B.** Propanal

C. Acetone

D. acetaldehyde

# Answer: C

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**40.** Which of the following can be used to differentiate between ethanal and propanal-

A. Ammoniacal  $AgNO_3$ 

**B.** Fehling solution

C.  $I_2$  in presence of base

D. Schiff reagent

# Answer: C

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**41.** In the formation of an aldol,  $\alpha$ -carbon atom of one aldehyde molecule

attaches to \_\_\_\_\_ of another aldehyde molecule.

A.  $\alpha$ -hydrogen atom

B.  $\alpha$ -carbon atom

C. carbonyl carbon atom

D.  $\beta$ -carbon atom

#### Answer: C



**42.** Formaldehyde when treated with KOH (caustic potash) gives methanol

and potassium formate, the reaction is known as

A. Cannizzaro reaction

B. Wurtz's reaction

C. Wolff-Kishner reduction

D. Clemmensen'e reduction

#### Answer: A

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43. Cannizzaro reaction does not take place with

A.  $(CH_3)_3$ CCHO

 $\mathsf{B.}\,CH_3CHO$ 

C. 📄

D. 📄

Answer: B

44. Acetals are

A. ketones

B. diethers

C. aldehyde

D. hydroxy aldehydes

Answer: B

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45. Which of the following is used for silvering mirrors ?

A. Benzaldehdye

B. Benzoic acide

C. Formaldehyde

D. formic acid

# Answer: C



46. Which of the following is used in perfumery and dye industry ?

A. Benzyl alcohol

B. Benzlamine

C. Benzoic acid

D. Benzaldehdye

#### Answer: D



**47.** A carboxyl group can be considered as combination of \_\_\_\_\_\_.

A. a carbonyl group and ether group

B. a keto group and an ester group

C. a carbonyl group and hydroxyl group

D. an aldehyde group and alkyl group

### Answer: C

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48. The common name of carboxylic fatty acids is derived from

A. the name of parent alkenes

B. the name of corresponding aldehdyes

C. the name of their original sources

D. the name of alkyl group present in it

#### Answer: C

**49.** IUPAC name of valeric acid is\_\_\_\_\_\_.

A. pentanoic acid

B. pentanioc acid

C. propanoic acid

D. ethanoic acid

Answer: A

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50. Hexanoic acid is\_\_\_\_\_.

A. n-caproic acid

B. valeric acid

C. stearic acid

D. palmitic acid

## Answer: A



**51.** IUPAC name for isobutyric acid is\_\_\_\_\_\_.

A. 2-methylpropanoic acid

B. butanoic acid

C. butanol

D. dimethylethanoic acid

#### Answer: A



**52.** IUPAC name of  $CH_3 - CH_2 - CH_2 - CH_2 - COOH$  is \_\_\_\_\_.

 $NH_2$ 

- A. 2-amino-2-ethylethanoic acid
- B. 3-aminobutanoic acid
- C. 2-aminobutanoic acid
- D.  $\alpha$ -amonipropanoic acid

# Answer: C

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A. 3,4-dimethylpentanoic acid

- B. 2,3-dimethylpentanoic acid
- C. dimethylpentanoic acid
- D. 1,1-dimethyl-2-methylbutanioc acid

# Answer: A



# 54. The C - C = O and O = C - O bond angle in catboxylic acid is

A.  $120^{\,\circ}$ 

B.  $90^{\circ}$ 

C.  $150^{\circ}$ 

D.  $100\,^\circ$ 

# Answer: A

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55. 2-Methylbutanioc acid can be prepared in a single step from \_\_\_\_\_.

 $\mathsf{B.}\,CH_3CH_2CH_2CHO$ 

$$\mathsf{C.}\,CH_3CH_2-\operatornamewithlimits{C}_{\substack{|\\CH_3}}=O$$

D.  $CH_3CH_2CH(CH_3)CHO$ 

Answer: D

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56. Which of the following compounds on boiling with alkaline  $KMnO_4$ 

and subsequent acidification will not give benzoic aicd ?

A. Benzyl alcohol

B. Acetophenone

C. Anisole

D. Toluene

Answer: C

**57.** Hydrolysis of  $R - C \equiv N$  will give \_\_\_\_\_.

A. 
$$R - C - OH$$
  
 $|| O$   
B.  $R - C - H$   
 $|| O$   
C.  $R - C - R'$   
 $|| O$   
D.  $R - C - R'$ 

# Answer: A

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58. Hydrolysis of acetamide gives \_\_\_\_\_.

A. acetone

B. acetaldehyde

C. acetic acid

D. ethylamine
# Answer: C

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59. Carbon dioxide can be converted into acetic acid by the action of

A.  $CH_{3}CHO/LiAlH_{4}$ 

B.  $C_2H_5MgBr/H_3O^+$ 

C.  $CH_3MgBr/H_3O^+$ 

D. sodium formate

Answer: C

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**60.**  $Ph - COOC_2H_5$  on heating with dil.  $H_2SO_4$  produces \_\_\_\_\_.

- A. benzoic acid and ethyl alcohol
- B. benzene and ethyl alcohol
- C. benzenediazonium chloride and ethyl alcohol
- D. benzoic acid and methyl alcohol

## Answer: A

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61. Lower aliphatic carboxylic acids are \_\_\_\_\_.

A. coloured liquids

B. colourless liquids

C. wax like solids

D. gases

Answer: B



62. Lower carboxylic acids are souble in water due to

A. low molecular weight

B. hydrogen bonding

C. dissociation into ions

D. easy hydrolysis

#### Answer: B

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**63.** Which class of compounds show H-bonding even more than in alcohols /

A. phenols

B. carboxylic acids

C. Eithers

# D. Aldehydes

#### Answer: B

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The above reaction is showing the \_\_\_\_\_ property of carboxylic acid.

A. acidic

B. basic

C. oxidizing

D. reducing

#### Answer: A

<b>65.</b> In	$CH_{2}COO$	HandHCOOH.	HCOOH	will be	
	0	,			

A. less acidic

B. equally acidic

C. more acidic

D. basic

Answer: C

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66. In the formation of ester from carboxylic acid, the bond broken is

A. C-OH

B. C=O

С. О-Н

D. Both (A) and (B)

# Answer: A



67. Acetic acid reacts with  $PCl_5$  to form

A. acetyl chloride

B. acetyl amine

C. acetic anhydride

D. acetal

Answer: A

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68. Acetic chloride cannot be obtained by treating acetic acid with

A.  $CHCl_3$ 

B.  $SOCl_2$ 

 $\mathsf{C}.\,PCl_3$ 

D.  $PCl_5$ 

Answer: A

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69. The reaction between acid and alcohol is known as:

A. higher C containing acid

B. secondary alcohol

C. alkane

D. ester

Answer: D

**70.** On heating with  $P_2O_5$ , acetic acid gives :

A. acetyl oxide

B. acetic anhydride

C. acetyl oxime

D. acetyl amide

#### Answer: B

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71. Carboxylic acid reacts with ammonia resulting in the formation of

A. amine

B. imine

C. oxime

D. amide

# Answer: D



72. Reduction of carboxylic acid gives \_\_\_\_\_.

A. secondary alcohol with hydrogen I presence of palladium

B. primary alcohol with  $LiAlH_4$ 

C. aldehyde with  $LiAlH_4$ 

D. primary alcohol with  $K_2 C r_2 O_7$ .

#### Answer: B

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**73.**  $CH_3CH_2 - C - ONa + NaOH \xrightarrow{CaO}{\Delta} A + B$ , A and B are respectively \_\_\_\_\_.

A. ethane and sodium carbonate

B. methane and sodium carbonate

C. n-propane and sodium carbonate

D. n-butane and sodium carbonate

## Answer: A

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74. The reaction,

 $CH_{3}COOH + Cl_{2} \xrightarrow{P} ClCH_{2}COOH + HCl$ 

is called

A. Hell-Volhard-Zelinsky reaction

**B.** Fischer reaction

C. Rosenmund reaction

D. Friedel Craft's reaction

# Answer: A



75. Nitration of benzoic acid gives

A. 3-nitrobenzoic acid

B. 2-nitrobenzoic acid

C. 2,3-dinitrobenzoic acid

D. 2,4-dinitrobenzoic acid

#### Answer: A



76. Formic acids is used in .

A. rubber industries

Β.	the	manufacture of leather	
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C. textile industries

D. all of these

## Answer: D

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**77.** Urotropine is a \_\_\_\_\_.

A. primary amine

B. secondary amine

C. tertiary amine

D. quaternary ammonium salt

#### Answer: C

	78.	Diacetone	alcohol	on	heating	gives	
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A. acetone

B. mesityl oxide

C. diacetone amine

D. acetoxime

#### Answer: B

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**79.** If acetaldehyde is treated with Benedict or Fehling solution, the change that occurs in the system is \_\_\_\_\_.

A.  $Ag^+ o Ag$ B.  $Cu^{2+} o Cu$ C.  $Cu^{+2} o Cu^+$ D.  $Na^+ o Na$ 

Answer: C
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Critical Thinking
<b>1.</b> General formula of simple aliphatic saturated aldehydes and ketones is
A. $C_n H_{2n+2} O$
B. $C_n H_{2n} O$
C. $C_n H_{2n+1} O$
D. $C_n H_{2n} O_2$

## Answer: B

2. Which of the following are carbonyl compounds?

A. Aldehydes and ketones

B. Carboxylic acids and esters

C. Acid anhydrides

D. all of these

#### Answer: D

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**3.** Acetone is the first member of the homologous series of ketone, whereas pentan-2-one is \_\_\_\_\_ member of the homologous series of ketone.

A.  $5^{th}$ 

 $\mathsf{B}.\,2^{nd}$ 

 $C. 3^{rd}$ 

 $\mathsf{D.}\,4^{th}$ 

Answer: C



4. Ethanal has \_\_\_\_\_.

A.  $6\sigma$  bonds and  $1\pi$  bonds

B.  $6\sigma$  bonds and  $2\pi$  bonds

C.  $5\sigma$  bonds and  $1\pi$  bonds

D.  $5\sigma$  bonds and  $2\pi$  bonds

## Answer: A



5. Which of the following is a mixed ketone ?

A. Acetone

B. Benzophenone

C. Diehtyl ketone

D. Ethyl n-propyl ketone

## Answer: D

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6. IUPAC name of ethyl isopropyl ketone is

A. 4-methylpentan-3-one

B. 1,1-dimethylbutan-2-one

C. 2-methylpentan-3-one

D. 4,4-dimethylbutan-3-one

## Answer: C

- 7. Write IUPAC name of the compound  $CH_3 CH CO CH CH_3$ .
  - A. 1,4-dimethylpentanone
  - B. 2,4-dimethylpentan-3-one
  - C. 3,5-dimethylhexan-4-one
  - D. 2,4-dimethylhexan-3-one

## Answer: D

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8. The IUPAC name of :

 $H_5C_2- egin{array}{ccc} C & H- & C & H-C_2H_5 \ ext{is} \ CHO & & C_{H_3} \end{array}$ 

- A. 2-ethyl-3-methylpentanal
- B. 4-methylhexanal

- C. 3-ethyl-2-methylpentanal
- D. 3,3-diethylpropanal

Answer: A

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**9.** The IUPAC name of  $(CH_3)_2 C(OH) CH_2 COCH_3$  is

A. 4-hydroxy-4-methylpentan-2-one

B. 2-hydroxy-2-methylpentan-4-one

C. diacetone alcohol

D. 4-hydroxy-4-methyl-2-oxopentane

Answer: A

10. A ketone can be prepared by which of the following processess ?

A. Hydration of alkene

B. Oxidation of secondary alcohol.

C. Reduction of acid.

D. Hydrolysis of a cyanide.

## Answer: B

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**11.** Slow and partial oxidation of pentan-1-ol gives\_\_\_\_\_.

A. n-butyraldehyde

B. n-glyceraldehyde

C. n-valeraldehyde

D. n-crotonaldehyde

# Answer: C



**12.** Choose the pair in which both the members give acetone in one step only :

A. 
$$(CH_{3}COO)_{2}Ca, CH_{3}C \equiv CH$$
  
B.  $(C_{2}H_{5}COO)_{2}Ca, (CH_{3})_{2}C = CH_{2}$   
C.  $CH_{3}C \equiv CH, (CH_{3})_{2}CHCl$   
D.  $(CH_{3})_{2}CHCl, (CH_{3})_{2}C = CH_{2}$ 

#### Answer: A



13. To syntheize acetone from Grinard reagent  $(CH_3Mgl)$  which of the

following is used ?

A. Benzonitrile

B. Pent-3-ennitrile

C. Formonitrile

D. Acetonitrile

Answer: D

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**14.** Formaldehyde CANNOT be prepared by \_\_\_\_\_.

A. oxidation of methanol

B. Rosenmund's method

C. Dehydrogenation of methanol

D. Ozonolysis of ethylene

#### Answer: B

**15.** The reagent one would choose to transform  $CH_3CH_2COCl$  into  $CH_3CH_2COCH_3$  is \_\_\_\_\_.

A.  $CH_3Mgl$ 

 $\mathsf{B.}\,(CH_3)_2Cd$ 

 $\mathsf{C.}\,(CH_3O)_2Mg$ 

D.  $CH_3Cl$ 

Answer: B

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16. The reagent used to prepare benzaldehyde by stephen reaction is

A.  $CO + HCl/AlCl_3$ 

B.  $SnCl_2$  / dil.HCl

 $\mathsf{C.}\,CrO_2Cl_2\,/\,CS_2$ 

D.  $Pd/BaSO_4/quinoline$ 

Answer: B

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**17.** Which of the following forces is correctly described about boiling point of Aldehydes & ketones -

A. Hydrogen Waal's

B. Van der Waal's

C. Dipole-dipole attraction

D. Dipole-dipole repulsion

Answer: C

18. Which of the following statements is WRONG ?

A. The polar character of the C=O group gives rise to intermolevular

attraction called dipole-dipole attractions.

- B. The lower aldehydes and ketones are soluble in water
- C. The boiling points of aldehydes and ketones are lower than those

of nonpolar alkanes of comparable molecular weight.

D. Aldehydes and ketones are incapable of forming intermolecular

hydrogen bonding with themselves.

#### Answer: C

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19. Least reactive towards nucleophilic additon is

A. 
$$CH_2=O$$

B. 
$$H - \underset{O}{C} - C_2 H_5$$
  
C.  $CH_3 - \underset{||}{C} - C_2 H_5$   
D.  $CH_3 - \underset{O}{C} - H_1$ 

## Answer: C



**20.** The general order of reactivity of carbonyl compounds for nucleophilic addition reactions is -

A. 
$$H_2C=O>RCHO>ArCHO>R_2C=O>Ar_2C=O$$

$$\mathsf{B}. ArCHO > Ar_2C = O > RCHO > R_2C = O > H_2C = O$$

$$\mathsf{C.} Ar_2C = O > R_2C = O > ArCHO > RCHO > H_2C = O$$

D. 
$$H_2C = O > R_2C = O > Ar_2C = O > RCHO > ArCHO$$

#### Answer: A

21. Among the following compounds which one will react with acetone to

give a product containing a carbon-nitrogen double bond ?

A.  $C_6H_5NHC_6H_5$ 

B.  $(CH_3)_2N$ 

С. 📄

D.  $C_6H_5NHNH_2$ 

Answer: D

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22. Pentan -2- one differs from pentane-3 one in that :

A. pentan-3-one does not react with  $NaHSO_3$ 

B. pentan-2-one gives iodoform test

C. pentan-3-one gives iodoform test

D. pentan-2-one does not react with  $NaHSO_3$ 

Answer: B

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**23.** The reagent which can be used to distinguish acetopheone from benzophenone is :

A. 2,4-dinitrophenylhydrazine

B. aqueous  $NaHSO_3$ 

C. Benedict's reagent

D.  $I_2$  and NaOH

Answer: D

24. The compound formed when propionalaldehyde reacts with dil.NaOH

solution is \_\_\_\_\_.

A.  $CH_3CH_2COOCH_2CH_2CH_3$ 

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

 $\mathsf{C.}\,CH_3CH_2CHOHCH_2CH_2CHO$ 

 $\mathsf{D.}\,CH_3CH_2COCH_2CH_2CHO$ 

Answer: B

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**25.** 
$$CH_3 - CHO \xrightarrow{NaOH} CH_3CH(OH)CH_2CHO$$

In the aldol condensation of acetaldehyde represented above, which of

the following intermediate species as obtained?



в. 📄

С. 📄

D. all of these

Answer: D

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26. Which of the following statement is WRONG ?

A. Acetone gives iodoform reaction.

B. Acetone gives diacetone amine on treatment with ammonia.

C. Acetone gives crotonaldehyde on aldol codensation .

D. all of these

Answer: C

27. Monocarboxylic acids are generally known as fatty acids because

A. they are solids at room temperature

B. They are immisible inwater

C. Their esters are widely present in animal and vegetable fats and

were previously obtained from their esters

D. They are derived from monohydric alcohols

# Answer: C

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# **28.** $CH_3(CH_2)_{14}COOH$ is chemical formula of

A. n-caproic acid

B. palmitic acid

C. valeric acid

D. mellitic acid

# Answer: A



**29.** The IUPAC name of  $\alpha-$  methylpropionic acid is

A. 2-propanioc acid

B. 2-butanoic acid

C. 2-methylpropanioc acid

D. 2-methylbutanoic acid

## Answer: C



**30.** IUPAC name of dimethyllacetic acid is \_\_\_\_\_\_.

- A. 1,1-dimethylethanoic acid
- B. 2,2-methylpropanoic acid
- C. 2-methylpropanoic acid
- D. 2,2-dimethylpropanoic acid

#### Answer: C



31. Which of the following methods will NOT yields a carboxylic acid ?

A. Hydrolysis of a nitrile by boiling with dilute acid.

- B. Oxidation of an aldehdye with acidified  $Kr_2Cr_2O_7$  .
- C. Oxidation of primary alcohol with acidified  $Kr_2Cr_2O_7$  .
- D. Heating a tertiary alcohol with aqueous  $KMnO_4$  solution.

#### Answer: D

**32.** When benzyl alcohol is oxidised with hot acidic  $KMnO_4$  , the product

obtained is :

A. benzaldehyde

B. benzoic acid

C. benzophenone

D. benzidine

Answer: B

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33. Which of the following undergoes hydrolysis when dissolved in water

to give Crboxylic acid ?

A.  $CH_3COONa$ 

 $\mathsf{B.}\, CH_3 CONH_2$ 

C. Both (A) and (B)

 $\mathsf{D.}\, C_6H_5CH_3$ 

Answer: C

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34. 2,3-dimethyl butanoic acid can be obtained from dry ice using

A.  $CH_3C(CH_3)CH_2MgBr$ 

B.  $CH_3CH(CH_3)CH(CH_3)MgBr$ 

 $\mathsf{C.}\,CH_3CH(C_2H_5)CH_2MgBr$ 

 $\mathsf{D.}\, C_2H_5CH_2MgBr$ 

Answer: B

35. Acetic acid dissolved in benzene shows a molecular mass of:

A. decreases

B. increases

C. either increases or decreases

D. suffers on change

#### Answer: B

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**36.** Which of the following reactions is showing the acidic property of carboxylic acid ?

A. 📄

В. 📄

С. 📄

D. all of these
# Answer: D

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37. Which of the following acids has the smallest dissociation constant-

A.  $CH_3CHFCOOH$ 

 $\mathsf{B}.\,FCH_2CH_2COOH$ 

 $\mathsf{C}. BrCH_2CH_2COOH$ 

D.  $CH_3CHBrCOOH$ 

Answer: C

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38. Which of the following is the CORRECT order of increasing strengths

of carboxylic acids ?

$$\begin{split} \textbf{A}. \ CH_2FCOOH &< CH_3COOH &< CH_2ClCOOH &< CCl_3COOH \\ \textbf{B}. \ CH_3COOH &< CH_2ClCOOH &< CH_2FCOOH &< CCl_3COOH \\ \textbf{C}. \ CH_2ClCOOH &< CH_2FCOOH &< CCl_3COOH &< CH_3COOH \\ \textbf{D}. \ CCl_3COOH &< CH_2ClCOOH &< CH_2FCOOH &< CH_3COOH \\ \end{split}$$

### Answer: B

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**39.** The compound formed when 3,5-dinitrobenzoic acid reacts with thionyl chloride is .

A. 3,5-dinitrobenzene

B. 3,5-dinitrobenzene chloride

C. 3,5-dinitrobenzene thionyl chloride

D. 3,5-dinitrobenzoyl chloride

Answer: D



**40.** Which one of the following compound gives aspirin on reacting with acetic anhydride in presence of  $H_2SO_4$ 



**41.** Treatment of benzoic acid with  $Cl_2/FeCl_3$  will give

A. p-chlorobenzoic acid

B. o-chlorobenzoic acid

C. 2,4-dichlorobenzoic acid

D. m-chlorobenzoic acid

Answer: D

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42. Benzyl phenyl ketone is \_\_\_\_\_.

A.  $C_6H_5COC_6H_5$ 

B.  $C_6H_5-CO-CO-C_6H_5$ 

C.  $C_6H_5CH_2-CO-C_6H_5$ 

D.  $C_6H_5CH_2-CO-CH_2-C_6H_5$ 

Answer: C

### Answer: B

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**44.** Which of the following compounds neither forms semicarbazone oxime ?

A. 
$$H - \mathop{C}_{\substack{||\\ O}} - H$$
  
B.  $CH_3 - \mathop{C}_{\substack{||\\ O}} - NH - CH_3$ 

C. 
$$CH_3 - \displaystyle \mathop{C}_{\scriptstyle \mid \mid} - \displaystyle CH_2Cl$$
  
 $\displaystyle \stackrel{\scriptstyle \mid \mid}{\scriptstyle O}$   
D.  $CH_3 - \displaystyle \mathop{C}_{\scriptstyle \mid} H - CHO$   
 $\displaystyle \stackrel{\scriptstyle \mid}{\scriptstyle CH_3}$ 

Answer: B

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45. Acetic acid dissolved in benzene shows a molecular mass of:

A. 30

B. 60

C. 120

D. 240

# Answer: C

**46.**  $CH_2 = CH - (CH_2)_5 COOH \xrightarrow{\text{Peroxide}}_{HBr} Z$  where Z is \_\_\_\_\_.

A.  $CH_3 - CH(Br) - (CH_2)_5 COOH$ 

B.  $BrCH_2 - (CH_2)_6COOH$ 

 $\mathsf{C.}\,CH_2=CH-(CH_2)_5-CH_2OH$ 

D.  $C_6H_5COOH$ 

#### Answer: B

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**47.** Mesityl oxide is an example of \_\_\_\_\_\_.

A. polymer

B.  $\alpha, \beta$ -unsaturated alcohol

C.  $\alpha,\,\beta$ -unsaturated ketone

D.  $\alpha, \beta$ -unsaturated acid

# Answer: C

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48. The product obtained by dry distillation of calcium formate reacts

with ammonia to yields \_\_\_\_\_\_.

A. formamide

B. acetamide

C. acetaldehyde ammonia

D. urotropine

Answer: D

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49. End product in the following reactions

 $(CH_3)_3C-CHO+CH_3CH_2CHO \xrightarrow{diluteOH^-} A \xrightarrow{H^+}_{-H_2O} B \xrightarrow{NaBH_4} C \quad \ \ \text{is}$ 

A. 
$$(CH_3)_3 C - C = CHCH_2CH_2OH$$
  
 $\downarrow_{CH_3}$   
B.  $(CH_3)_3 C - CH_2 - CH_2OH$   
C.  $(CH_3)_3 C - CH_2CH_2CH_2OH$   
D.  $(CH_3)_3 C - CH = C - CH_2OH$ 

#### Answer: D

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50. Which of the following is INCORRECT ?

A.  $FeCl_3$  is used to detect phenols.

B. Fehlings solution is used in the detection of glucose.

C. Tollen's reagent is used in the detection of unsaturated.

D. iodoform reaction is used in the detection of methyl ketones.

# Answer: C



51. Addition of alcohols to aldehydes in presence of anhydrous acids yield:

A. carboxylic acids

B. ethers

C. cyclic ethers

D. acetals

#### Answer: D



**52.** An organic compound X on treatement with acidified  $K_2Cr_2O_7$  gives a compound Y which reats with  $I_2$  and sodium carbonate to form triiodomethane. The compound X is A.  $CH_3OH$ 

 $\mathsf{B}.\,CH_3-CO-CH_3$ 

 $C. CH_3 CHO$ 

D.  $CH_3CH(OH)CH_3$ 

Answer: D

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**Competitive Thinking** 

1. Which of the following compounds does not contain an -OH group

A. phenol

B. carboxylic acid

C. Aldehydes

D. Alcohols

# Answer: C



2. What is the compound called if remaining two valencies of a carbonyl

group are satisfied by two alkyl groups ?

A. Aldehyde

- B. Ketone
- C. Acid
- D. Acid chloride

Answer: B

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3. In aldehydes and ketones, carbon of carbonyl group is

A.  $sp^3$  hybridized

B.  $sp^2$  hybridized

C. sp hybridized

D. unhybridized

Answer: B

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4. The enolic form of acetone contains:

A. 9 sigma bonds, 1 pi bond and 2 lone paris

B. 8 sigma bonds, 2 pi bonds, 2 lone pairs

C. 10 sigma bonds, 1 pi bonds, and 1 lone pair

D. 9 sigma bonds, 2 pi bonds , 1 lone pair

### Answer: A

5. Which are mixed ketones?

A. Propanone

**B.** Butanone

C. Pentan-3-one

D. None of these

Answer: B

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**6.** IUPAC name of  $CH_3COCH_3$  is \_\_\_\_\_.

A. acetone

B. propan-2-one

C. dimethyl ketone

D. propanal

### Answer: B



# 8. Name the compound

# $CH_3CH(C_2H_5)CH(CHO)CH_3$

A. 2-Ehtylbutan-3-ol

B. 2,3-Dimethylpentanal

C. 3-Ethylbutan-2-al

D. 2-Ethylbutanal

Answer: B

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**9.** The IUPAC name of  $CH_3 - CO - (CH_2)_3 - CH_3$  is \_\_\_\_\_.

A. Hexan-2-one

B. Hexan-3-one

C. 3-methylbutan-2-one

D. 3-methylpentanal

# Answer: A

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<b>10.</b> Ethyl alcohol on oxidation with PCC gives				
A. acetone				
B. acetaldehyde				
C. ether				
D. ethylene				
Answer: B				
Watch Video Solution				

11. Which of the following is oxidized to form ethyl methyl ketone ?

A. propan-2-ol

B. butan-1-ol

C. butab-2-ol

D. t-Butyl alcohol

Answer: C

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12. Which of the following compounds is oxidised to prepare Methyl Ethyl

ketone?

A. propan-2-ol

B. butan-1-ol

C. butab-2-ol

D. t-Butyl alcohol

Answer: A

13. Ethylene dichloride on treatment with aqueous KOH gives

A. 
$$CH_3 - CHO$$
  
B.  $CH_2 - CH_2$   
 $\downarrow$   
 $OH$   
 $OH$   
C. HCHO  
D.  $C$   
 $HO$   
 $CHO$ 

#### Answer: B

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14.  $O_3$  reacts with  $CH_2=CH_2$  to form ozonide. On hydrolysis it forms

A. ethylene oxide

B. HCHO

C. ethylene glycol

D. ethyl alcohol

### Answer: B



**15.** Which of the following gases when passes through warm dilute solution of  $H_2SO_4$  in presence of  $HgSO_4$  gives acetaldehyde?

A.  $CH_4$ 

 $\mathsf{B.}\, C_2 H_2$ 

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

 $\mathsf{D.}\, C_2 H_6$ 

Answer: B

16. When but-1-yne is treated with aqueous  $H_2SO_4$  in presence of  $HgSO_4$ 

, the major product is \_\_\_\_\_.

A. 
$$CH_3 - CH_2 - CH_2 - CHO$$

B. 
$$CH_3 - CH_2 - CO - CH_3$$

$$\mathsf{C}.\,CH_3-CH_2-CH=CH_2$$

D. 
$$CH_3 - CH_2 - CH_2 - CH_2 - OH$$

#### Answer: B

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**17.** Dry distillation of  $(CH_3COO)_2Ca$  produces \_\_\_\_\_.

A.  $CH_3COOH$ 

 $\mathsf{B.}\,CH_3CHO$ 

 $C. (CH_3)_2 CO$ 

D.  $CH_3COOCH_3$ 

# Answer: C



18. On heating calcium acetate and calcium formate, the product formed

is :

A.  $CH_3COCH_3$ 

 $\mathsf{B.}\,CH_3CHO$ 

 $\mathsf{C}. HCHO + CaCO_3$ 

 $D. CH_3 CHO + CaCO_3$ 

Answer: B

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19.  $(CH_3COO)_2Ca + (HCOO)_2Ca \xrightarrow{\text{Heat}}$ 

A.  $CH_3COCH_3$ 

B.  $CH_3CHO$ 

 $C.HCHO + CaCO_3$ 

 $\mathsf{D}. CH_3CHO + CaCO_3$ 

Answer: B

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20. 3-Pentanone can be obtained by dry distillation of

A. calcium acetate and calcium formate

B. calcium propionate

C. calcium acetate

D. calcium propionate and calcium formate

Answer: B

21. When calcium formate and calcium propionate are dry distilled,

\_\_\_ is obtained .

A. acetone

B. propionaldehyde

C. crotonaldehyde

D. acetaldehyde

Answer: B

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**22.** By combining the two calcium salts of carboxylic acids we are preparing 2-butanone.Find the correct pair of the following :

A. Calcium formate + calcium propanoate

B. calcium acetate+ calcium propanoate

C. calcium acetate+ calcium acetate

D. calcium formate + calcium acetate

### Answer: B

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23. On heating calcium acetate and calcium formate, the product formed

is :

A. formaldehyde

B. acetaldehyde

C. acetone

D. ethyl methyl ketone

Answer: C

24. 
$$R-C\equiv N+2Hrac{(i)SnCl_2\,/\,{
m dil.}\,HCl}{(ii)H_3O^+}RCHO+NH_4Cl$$
 this

reaction is known as

A. Etard reaction

**B.** Stephen reaction

C. Hell-Vohlard-Zelinsky reaction

D. Balz-Schiemann reaction

Answer: B

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**25.** Which of the following compound gives a ketone with Grignard reagent?

A. Formaldehyde

B. Ethyl alcohol

C. Methyl cyanide

D. Methyl iodine

## Answer: A



26. What is the reagent used in Stephen reaction ?

A. Chromyl chloride

B. Ethanoyl chloride

C.  $SnCl_2$  and HCl

D. Cadmium chloride

# Answer: C



27. 
$$C_6H_6+CO+HCl \xrightarrow{ ext{Anhy. AlCl}_3} X+HCl$$
 compound X is

A.  $C_6H_5CH_3$ 

 $\mathsf{B.}\, C_6H_5CH_2Cl$ 

 $C. C_6H_5CHO$ 

 $\mathsf{D.}\, C_6H_5COOH$ 

Answer: C

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28. Acetophenone is prepared from :

A. Rosenmund reaction

B. Sandmeyer reaction

C. Wurtz reaction

D. Friedel Craft reaction

### Answer: D

29. Which one of the following compounds is prepared in the laboratory

from benzene by a substitution reaction ?

A. Glyoxal

B. Cyclohexane

C. Acetophenone

D. Hexabromocyclohexane

### Answer: C

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30. Benzene can be conveniently converted into n-propyl benzene by

A. Friedel-Craft alkylation with n-propyl chloride

B. Friedel-Craft acylation with propionyl chloride followed by Wolff-

Kshner reduction

C. Friedel\_Craft acylation with propionyl chloride followed by catalytic

hydrogenation.

D. Friedel-Craft acylation with propionyl chloride followed by

reduction with  $LiAlH_4$ 

Answer: B

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$$\textbf{31.} CH_3 COCl + H_2 \xrightarrow[]{Pd/BaSO_4}{\text{Quinoline}}$$

A.  $C_2H_5OH$ 

 $\mathsf{B.}\,CH_3COOH$ 

 $\mathsf{C.}\,C_2H_5CHO$ 

D.  $CH_3COCH_3$ 

### Answer: C

**32.** Which of the following compounds when treated with dibenzyl cadmium yields benzyl methyl ketone ?

A. acetone

B. acetaldehyde

C. Acetic acid

D. Acetyl chloride

Answer: D

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**33.** Which compoud is soluble in  $H_2O$  ?

A. HCHO

 $\mathsf{B.}\,CH_3CHO$ 

C.  $CH_3COCH_3$ 



# Answer: D



**35.** Which of the following is most reactive towards addition reaction of hydrogen cyanide to form corresponding cyanohydrin ?

A. acetone

B. Formaldehyde

C. Acetaldehyde

D. diethylketone

Answer: B

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36. The CORRECT order of reactivity of aldehdyes and ketones towards

hydrogen cyanide is \_\_\_\_\_.

A.  $CH_3COCH_3 > CH_3CHO > HCHO$ 

 $\mathsf{B}. CH_3COCH_3 > HCHO > CH_3CHO$ 

 $\mathsf{C.}\,CH_3CHO > CH_3COCH_3 > HCHO$ 

 $\mathsf{D}. HCHO > CH_3CHO > CH_3COCH_3$ 

### Answer: D



**37.** From which of the following tertiary butyl alcohol is obtained by the action of methyl magnesium iodide

A. HCHO

 $\mathsf{B.}\,CH_3CHO$ 

 $\mathsf{C.}\,CH_3COCH_3$ 

 $\mathsf{D.}\, CO_2$ 

Answer: C





# Answer: C



**40.** Formaldehyde reacts with excess of ammonia to give

A. hexamethylene tetramine

B. formaldehyde ammonia

C. formalin

D. methylamine

### Answer: A

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**41.**  $A \xrightarrow{[O]} B \xrightarrow{Na_2OH} (CH_3)_2 C = NOH.$  Identify A.

A. 
$$CH_3 - \overset{O}{\overset{||}{C}} - CH_3$$
B.  $CH_3OH$ 

$$\mathsf{C}.\,CH_3-\stackrel{||}{\overset{||}{C}}H-CH_3$$

 $\mathsf{D.}\, C_2 H_5 OH$ 

Answer: C

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**42.** Acetaldehyde reacts with phenylhydrazine, the type is \_\_\_\_\_.

A. elimination

B. condensation

C. hydrolysis

D. addition

Answer: B

**43.** Aldehyde or ketones when treated with  $C_6H_5 - NH - NH_2$ . The product formed is

A. semicarbazone

B. phenylhydrazone

C. hydrozone

D. oxime

## Answer: B

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**44.** Aldehydes and ketones can be reduced to corresponding hydrocarbons by \_\_\_\_\_.

A. refluxing with water

B. refluxing with strong acid

C. refluxing with soda amalgam and water

D. refluxing with zinc amalgam and conc. HCl

### Answer: D



D.  $Na - Hg/H_2O$ 

#### Answer: A

**46.** 
$$2CH_3 - \underset{\substack{||\\O}}{C} - CH_3 \xrightarrow[H^+]{Mg/Hg}$$
 Product in the reaction is

$$\begin{array}{cccc} & CH_{3} & CH_{3} \\ \mathsf{A}. \ H_{3}C - & \begin{matrix} & & & \\ C & - & C \\ C & - & C \\ & & & \\ OH & OH \end{matrix}$$
$$\begin{array}{c} \mathsf{B}. \ CH_{3} - & C \\ & & & \\ OH & OH \end{matrix}$$
$$\begin{array}{c} \mathsf{B}. \ CH_{3} - & C \\ & & & \\ OH & OH \end{matrix}$$
$$\begin{array}{c} \mathsf{C}. \ CH_{3} - & C \\ & & & \\ OH & OH \end{matrix}$$
$$\begin{array}{c} \mathsf{C}. \ CH_{3} - & C \\ & & & \\ OH & OH \end{array}$$
$$\begin{array}{c} \mathsf{C}. \ CH_{3} - & C \\ & & & \\ OH \\ OH \end{array}$$
$$\begin{array}{c} \mathsf{O}. \ CH_{3} - & C \\ & & \\ OH \\ OH \end{array}$$

### Answer: A

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47. Which one of the following reagents can distinguish aldehydes and

ketones?

A. Feshling solution

B.  $H_2SO_4$  solution

 $C. NaHSO_3$ 

D.  $NH_3$ 

## Answer: A



48. Fehling A and Fehling B are :

A. alkaline sodium potassium citrate

B. acidified Rochelle salt

C. alkaline sodium potassium tartarate

D. acidified sodium potassium citrate

### Answer: C



49. Tollen's reagent is

A. ammoniacal cuprous chloride

- B. ammoniacal cuprous oxide
- C. ammoniacal silver bromide
- D. ammoniacal silver nitrate

### Answer: D

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50. When acetaldehyde is heated with Tollen's reagent which of the

following is obtained ?

A. Methyl alcohol

B. Silver acetate

C. Silver mirror

D. Formaldehyde

### Answer: C

51. Which of the following compounds will give positive test with Tollen's

reagent?

A. Acetamide

B. Acetaldehyde

C. Acetic acid

D. Acetone

Answer: B

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52. Schiff's reagent is \_\_\_\_\_.

A. ammoniacal silver nitrate

B. resorcinol solution in dilute HCl

C. alkaline  $CuSO_4$  stabilised by Rochelle salt

D. Rosaamiline solution in water decolourised by  $SO_2$ 

### Answer: D



A. aldehydes

B. ethers

C. ketones

D. carboxylic acid

Answer: A

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55. Which of the following will give yellow precipitate with  $I_2\,/\,NaOH^-$ 

A.  $ICH_2COCH_2CH_3$ 

 $\mathsf{B.}\,CH_3COOCOCH_3$ 

 $\mathsf{C.}\,CH_3CONH_2$ 

 $\mathsf{D.}\, CH_3 CH(OH) CH_2 CH_2$ 

Answer: D

**56.** Which of the following compounds does not undergo haloform reaction ?

A. 
$$CH_3 - CH - CH$$
  
 $OH$   
B.  $CH_3 - C - CH_3$   
 $O$   
C.  $C_2H_5 - CH - C_2H_5$   
D.  $CH_3 - C - C_2H_5$ 

### Answer: C

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57. Which of the following compound will give positive iodoform test?

A. Isopropyl alcohol

B. propionaldehyde

C. Ethylphenyl ketone

D. Benzyl alcohol

Answer: A

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58. How will you convert butan -2-one to propanoic acid ?

A.  $NaOH, I_2$  /  $H^+$ 

B. Tollen's reagent

C. Fehling solution

D. NaOH, Nal/  $H^+$ 

Answer: A

59. When acetaldehyde is reacted with very dilute sodium hydroxide,

\_\_\_\_ is obtained.

A. aldol

B. Ethyl alcohol

C. ketol

D. glyoxal

Answer: A

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**60.**  $\alpha$ ,  $\beta$ -Unsaturated aldehyde is formed in the sequence.

A. 
$$HCHO \xrightarrow{KOH_{(aq)}}$$

$$\mathsf{B}. CH_3 CHO \xrightarrow{dil.KOH} A \xrightarrow{\Delta} B$$

 $\mathsf{C.} \operatorname{CCl}_3\operatorname{CHO} \xrightarrow{\operatorname{KOH}_{(aq)}}$ 

 $\mathsf{D.}\, CH_3COOC_2H_5 \xrightarrow{KOH_{(aq)}}$ 

### Answer: B



**61.** Which of the following gives condensation product with  $NH_2OH$ , but

does NOT undergo aldol condensation ?

A. Methanal

B. Acetaldehyde

C. Methanol

D. Acetone

Answer: A



62. Of the following which is the product formed when cyclohexanone

undergoes aldol condensation followed by heating?

A.	
Β.	
C.	
D.	

## Answer: A

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63. Cannizzaro reaction is given by \_\_\_\_\_.

A. formaldehyde

B. acetone

C. acetaldehyde

D. butanal

### Answer: A



64. An example for a molecule undergoing both oxidation and reduction

simultaneously in Cannizzaro reacton is \_\_\_\_\_\_.

A. benzyl alcohol

B. benzene

C. benzaldehyde

D. acetaldehyde

Answer: C

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**65.** A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives

A. sodium benzoate and sodium formate

B. sodium formate and benzyl alcohol

C. sod	ium benz	oate and	methyl	alcohol
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D. benzyl alcohol and methyl alcohol

Answer: B

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66. Cannizzaro reaction is NOT shown by \_\_\_\_\_.

A. HCHO

 $\mathsf{B.}\, C_6H_5CHO$ 

C.  $CCl_3CHO$ 

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

Answer: D

**67.** m-Nitrobenzaldehyde on reaction with aqueous concentrated NaOH solution at room temperature , gives \_\_\_\_\_.

A. sodium m-nitrobenzoate and m-nitrobenzyl alcohol

B. m-hydroxybenzaldehyde and m-nitrobenzyl alcohol

C. m-nitrobenzyl alcohol and m-hydroxylbenzyl alcohol

D. sodium m-nitrobenzoate and m-hydroxybenzyl alcohol

### Answer: A

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68. This does NOT undergo aldol condensation :

A. HCHO

 $\mathsf{B.}\,CH_3CHO$ 

 $\mathsf{C.}\,CH_3COCH_3$ 

 $\mathsf{D.}\, CH_3 CH_2 CH_2 CHO$ 

## Answer: A



**69.** 
$$'X' \xrightarrow[(\text{Reductive})]{\text{Ozonolysis}} 'Y' + 'Z'$$

'Y' can be obtained by Etard's reaction. 'Z' undergoes disproportionation reaction with concentrated alkali. 'X' could be :



**70.** The general formula  $C_n H_{2n} O_2$  could be for open chain

A. diketones

B. carboxylic acid

C. diols

D. dialdehydes

Answer: B

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71. Which of the following compounds is known as oil of winter green?

A. Phenyl benzoate

B. Ohenyl salicylate

C. Phenyl acetate

D. dialdehydes

Answer: D

72. Which of the following is a tricarboxylic acid ?

A. Citric acid

B. Malonic acid

C. Succinic acid

D. Malic acid

Answer: A

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**73.** The name of the compound having the structure  $ClCH_2ClCHCOOH$  is \_\_\_\_\_.

A. 2,3-dichloropropanoic acid

B. Dichloropropanoic acid

C. chloro methyl 2-chloroethanoic acid

D. chlorosuccinic acid

## Answer: A



**74.** Some carboxylic acids and their IUPAC names are given below. Which of the following is not correctly matched ?

•	Carboxylic acids	IUPAC names
А.	Formic acid	Methanoic acid
В.	Carboxylic acids	IUPAC names
	Acetic acid	Ethanoic acid
С.	Carboxylic acids	IUPAC names
	Isobutyric acid	2-Methylbutanoic acid
D.	Carboxylic acids	IUPAC names
	n-Butvric acid	Butanoic acid

### Answer: C

75.  $CH_3 - C_{|_{C_2H_5}}H - CH_2 - C_{|_{CH_3}}H - COOH$ 

IUPAC name of the compounds is \_\_\_\_\_.

A. 2,2-dimethylpentanoic acid

B. 2-methyl,4-ethylpentanoic acid

C. 2,4-dimethylhexanoic acid

D. 4-ethyl-2-methylpentanoic acid

### Answer: C

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**76.** IUPAC name of  $CH_3CH_2COOC_2H_5$  is \_\_\_\_\_.

A. ethyl acetate

B. ethyl propanoate

C. ethoxypropane

D. Diethyl ester

### Answer: B



**77.** Acetic acid is obtained when \_\_\_\_\_\_.

A. methyl alcohol is oxidised with potassium permanganate

B. calcium acetate is distilled in the presence of calcium formate

C. acetaldehyde is oxidised with potassium dichromate and sulphuric

acid

D. dlycerol is heated with sulphuric acid

Answer: C

78. Acetic acid be obtained on oxidation of

A. ethanol

B. propanal

C. methanal

D. glyoxal

Answer: A

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79. Tertiary alcohols  $(3^{\,\circ}\,)$  having at least four carbon atoms upon drastic

oxidation yeild carboxylic acid with

A. one carbon atom less

B. two carbon atoms less

C. three carbon atoms less

D. the same carbon atom

### Answer: B

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<b>80.</b> Aryl aldehyde on oxidation gives
A. esters
B. carboxylic acid
C. ketones
D. alcohols
Answer: B
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<b>81.</b> Toluene is oxidised to benzoic acid by

A. acidified  $KMnO_4$ 

B. acidified  $K_2 C r_2 O_7$ 

 $\mathsf{C}.\,H_2SO_4$ 

D. both (A) and (B)

#### Answer: D

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82. A compound 'D' on hdyrolysis , formed acetamide which on further

hydrolysis gives acetic and  $NH_3$  . The compound 'D' is \_\_\_\_\_.

A.  $CH_3C\equiv N$ 

 $\mathsf{B.}\, C_2 H_5 I$ 

 $\mathsf{C.}\, C_2H_5OH$ 

D.  $C_2H_5O$ Na

#### Answer: A

83. When Grignard reagent is treated with dry ice, the product obtained is

A. Aldehyde

•

\_\_\_\_\_

B. acid

C. ester

D. ketone

Answer: B





Answer: B



**85.** The acid formed when n-propyl magnesium bromide is treated with carbon dioxide is

A.  $C_3H_7COOH$ 

 $\mathsf{B.}\, C_2 H_5 COOH$ 

 $\mathsf{C.}\,C_3H_8COOH$ 

 $\mathsf{D.}\, C_2 H_8 COOH$ 

Answer: A

86. Which of the acids cannot be prepared by Grignard reagent?

A. Methanoic acid

B. Ethanoic acid

C. Propanoic acid

D. Butyric acid

### Answer: A

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87. Alkaline hydrolysis of an ester is called:

A. neutralization

B. esterification

C. polymerization

D. saponification

## Answer: D





89. Glacial acetic acid is obtained by

A. distilling water

B. crystallizing , seperating and melting acetic acid

C. treating vinegar with dehydration agent

D. chemically separating acetic acid

#### Answer: B

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90. Which of the following compound will react with  $NaHCO_3$  solution

and produces salt and carbon dioxide?

A. Phenol

B. n-Hexanal

C. Acetic acid

D. Acetic anhydride

#### Answer: C

**91.** When propionic acid is treated with aqueous sodium bicarbonate,  $CO_2$  is liberated. The carbon of  $CO_2$  comes from

A. methyl group

B. methylene group

C. carboxylic acid group

D. bicarbonate

Answer: D

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92. What is the main reason for the fact that carboxylic acids can undergo

ionization

A. Absence of  $\alpha$ -hydrogen

B. Resonance stabilization of the carboxylate ion

C. High reactivity of  $\alpha$ -hydrogen

D. hydrogen bonding

Answer: B

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93. Acetic acid is weak acid than sulphuric acid because

A. it decompose on increasing temperature

B. it has less degree of ionization

C. it has -COOH group

D. it has less number of  $H^{\,+}\,$  ion

Answer: B

94. Which of the following compounds is most acidic in nature ?

A. 4-Chlorobutanoic acid

B. 3-Chlorobutanoic acid

C. 2-Chlorobutanoic acid

D. Butanoic acid

Answer: C

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95. Which of the following is the correct order of acidic strength ?

 $\mathsf{A}. CH_3COOH > ClCH_2COOH > Cl_2 \mathbb{C}COOH > Cl_3 \mathbb{C}OOH$ 

 $\mathsf{B}. \ Cl_3CCOOH > Cl_2CHCOOH > ClCH_2COOH > CH_3COOH$ 

 $\mathsf{C.}\ CH_3COOH > Cl_3CCOOH > Cl_2CHCOOH > ClCH_2COOH$ 

 $\mathsf{D}. \ CH_3 COOH > ClCH_2 COOH > Cl_3 CCOOH > Cl_2 CHCOOH$ 

# Answer: B



96. Which of the following order of acidic strength is NOT CORRECT ?

A.  $Cl_3CCOOH > Cl_2ChCOOH > ClCH_2COOH$ 

Β.

 $CH_{3}CH_{2}CHCOOH > CH_{3}CHCH_{2}COOH > CH_{2}CH_{2}CH_{2}COOH$  $ert_{Cl}$   $ert_{Cl}$   $ert_{Cl}$   $ert_{Cl}$   $ert_{Cl}$ c.  $HCOOH > CH_{3}COOH > C_{6}H_{5}COOH$ 

 $\mathsf{D}. \ CH_3 COOH > CH_3 CH_2 COOH > (CH_3)_2 CHCOOH$ 

Answer: C

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97. The acid strength of the following carboxylic acids increases in the

order \_\_\_\_\_

 $HCOOH > CH_3COOH, CH_3CH_2COOH, CH_3CH_2CH_2COOH$ 

A.

Β.

 $CH_3CH_2CH_2COOH > CH_3CH_2COOH > CH_3COOH > HCOOL$ 

C.

 $HCOOH > CH_3CH_2COOH > CH_3COOH > CH_3CH_2CH_2COOL$ 

D.

 $CH_{3}COOH > CH_{3}CH_{2}COOH > CH_{3}CH_{2}CH_{2}COOH > HCOOL$ 

Answer: B

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98. Consider the acidity of the carboxylic acids:

(1) *PhCOOH* 

(2)  $o - NO_2C_6H_4COOH$
(3)  $p - NO_2C_6H_4COOH$ 

(4)  $m - NO_2C_6H_4COOH$ 

Which of the following order is correct?

A. 
$$ii > iv > i > iii$$
  
B.  $ii > iv > iii > i$   
C.  $i > ii > iii > iv$   
D.  $ii > iii > iv > i$ 

#### Answer: D

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99. Laboratory method for the preparation of acetyl chloride is :

A.  $CH_3COOH + SOCl_2 \rightarrow CH_3COCl$ 

 $\mathsf{B.} CH_3COOH + PCl_3 \rightarrow CH_3COCl$ 

 $\mathsf{C.} \mathit{CH}_3 \mathit{COONa} + \mathit{PCl}_3 \rightarrow \mathit{CH}_3 \mathit{COCl}$ 

D.  $CH_3COCH_3 + PCl_3 \rightarrow CH_3COCl$ 

#### Answer: A



**100.** When propanoic acid reacts with  $PCl_5$ , it forms \_\_\_\_\_.

A. formyl chloride

B. acetyl chloride

C. methyl chloride

D. propionyl chloride

#### Answer: D



**101.** Heating mxiture of ethyl alcohol and acetic acid in presence of conc.  $H_2SO_4$  produces a fruity smelling compound. This reaction is called :

A. neutralization

B. ester hydrolysis

C. estrification

D. Williamson's synthesis

# Answer: C

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102. Which reagent will bring about the conversion of carboxylic acids

into esters /

A.  $C_2H_5OH$ 

B. Dry HCl + $C_2H_5OH$ 

C.  $LiAlH_4$ 

D.  $Al(OC_2H_5)_3$ 

### Answer: B



**103.** Which compound can be formed on heating ethanoic acid with  $P_2O_5$ 

?

A. ethyl alcohol

B. acetic anhydride

C. methanol

D. Acetyl chloride

#### Answer: B

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**104.** Which of the following carboxylic acids is the most reactive towards esterification ?

A.  $(CH_3)_3$ CCOOH

B.  $(CH_3)_2 CHCOOH$ 

 $\mathsf{C.}\,CH_3CH_2COOH$ 

D.  $(C_2H_5)_2CHCOOH$ 

Answer: C

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**105.** Esterification is studied by \_\_\_\_\_.

A. chemical analysis

B. tracers

C. thermodynamic method

D. None of these

### Answer: B



106. Acetic anhydride is obtained from acetyl chloride by the reaction of

A.  $P_2O_5$ 

 $\mathsf{B.}\,H_2SO_4$ 

 $\mathsf{C.}\,CH_3COONa$ 

D.  $CH_3COOH$ 

Answer: C

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107.  $CH_3COOH \xrightarrow{P_2O_5/\Delta} ? \xrightarrow{C_2H_5OH} A + CH_3COOH.$  A is \_\_\_\_\_.

A. ethyl formate

B. methyl acetate

C. methyl formate

D. ethyl acetate

Answer: D

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**108.** Acetic acid reacts with ammonia at  $110^{\circ}C$  to form \_\_\_\_\_.

A. acetamide

B. formamide

C. ammonium cyanate

D. urea

Answer: A

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**109.** Hydrolysis of an ester gives a carboxylic acid which on Kolbe's electrolysis yields ethane. The ester is :

A. ethyl methanoate

B. methyl ethanoate

C. propylamine

D. ethylamine

### Answer: B

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110. Which reaction is used for the preparation of  $\alpha$ -Bromoacetic acid ?

A. stephen reaction

B. haloform reaction

C. Hell-Vohlard-Zelinsky reaction

D. Perkin's condensation

# Answer: C



**112.** The carboxylic acid which shows reducing property is \_\_\_\_\_.

A. acetic acid

B. Ethanoic acid

C. oxalic acid

D. formic acid

### Answer: D

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**113.** Predict the product 'B' in the sequence of reaction $HC \equiv CH \xrightarrow{30\,\%\,H_2SO_4}_{HgSO_4} A \xrightarrow{NaOH} B$ 

A.  $CH_3COONa$ 

B.  $CH_3COOH$ 

 $C. CH_3 CHO$ 

D.  $CH_3 - \mathop{C}\limits_{\substack{\mid\\ OH}} H - CH_2CHO$ 

#### Answer: D

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114. In which of the following reactions, propanone gives propane?

A. Williamson's synthesis

B. Clemmensen's reaction

C. Cannizarro reaction

D. Wurtz reaction

Answer: B

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115. Among the given compounds, the most susceptible to nucleophilic

attack at the carbonyl group is

A. MeCOCl

B. MeCHO

C. MeCOOMe

D. MeCOOCOMe

### Answer: A



116. Which of the following has the most acidic hydrogen?

A. 3-Hexanone

B. 2,4-Hexanedione

C. 2,5-Hexanedione

D. 2,3-Hexanedione

#### Answer: B



117. Which of the following is optically active

A. Ethylene glycol

B. Oxalic acid

C. Glycerol

D. Tartaric acid

Answer: D

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**118.** Which of the following can add across the double bond of acetaldehyde?

A. Tollen's reagent

B. Hydroxylamine

C. Hydrogenation using  $Ni\,/\,H_2$ 

D. Phenylhydrazine

Answer: C



119. Which is most reactive of the following ?

A. Ehtyl acetate

B. acetic anhydride

C. Acetamide

D. Acetyl chloride

Answer: D

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120. Which of the following has fruity odour ?

A. Aniline

B. Ethyl alcohol

C. Ethyl acetate

# D. Acetaldehyde

# Answer: C



**121.** Acetonitrile 
$$\xrightarrow[H_2O]{}^{H^+} A \xrightarrow[-H_2O]{} B$$
. B is \_\_\_\_\_.

- A. acetic anhydride
- B. acetaldehyde
- C. Acetic acid
- D. acetanilide

# Answer: A



122. In the reaction

 $CH_3COOH \xrightarrow{LiAlH_4} A \xrightarrow{PCl_5} B \xrightarrow{Alc.KOH} C$ 

The product C is

A. acetaldehyde

B. acetylene

C. ethylene

D. Acetyl chloride

Answer: C

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**123.** The product D in the following reaction is \_\_\_\_\_.

 $CH_3Cl \xrightarrow{KCN} (A) \xrightarrow{H_2O} (B) \xrightarrow{NH_3} (C) \xrightarrow{\Delta} (D)$ 

A.  $CH_3CH_2NH_2$ 

 $\mathsf{B.}\, CH_3 CN$ 

 $\mathsf{C}.\,HCONH_2$ 

 $\mathsf{D.}\, CH_3 CONH_2$ 

Answer: D

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**124.**  $CH_3CONH_2 \xrightarrow{NaNO_2 / HCl} X$ , X is \_\_\_\_\_.

A.  $CH_{\cdot 3}COOH$ 

B.  $CH_3CONH_3Cl^-$ 

 $C. CH_3NH_2$ 

D.  $CH_3CHO$ 

Answer: A

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125. Acetic acid is manufactured by the fermentation of :

A. ethanol

B. methanol

C. ethanal

D. methanal

#### Answer: A

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126. 
$$C_2H_2 \xrightarrow{Hg(OH)_2 1\%} A \xrightarrow{[O]} B$$
, B is :

A. an acid

B. an aldehyde

C. a ketone

D. ethanol

# Answer: A



127. In the reaction m,

 $C_6H_5Oh \xrightarrow{NaOH} A \xrightarrow{CO_2} B \xrightarrow{HCl} C$ 

product C is \_\_\_\_\_.

A. benzoic acid

B. salicylaldehyde

C. chlorobenzene

D. salicyclic acid

#### Answer: D



128. The distinguishing test between methanoic acid and ethanoic acid is

A. litmus test

:

B. Tollen's test

C. esterification test

D. sodium becarbonate test

### Answer: B

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**129.** Which one of the following compounds forms a red coloured solution on treatement with neutral  $FeCl_3$  solution ?

A.  $CH_3COCH_3$ 

B.  $CH_3OCH_3$ 

 $\mathsf{C.}\, CH_3 CH_2 OH$ 

# D. $CH_3COOH$

#### Answer: D



130. Paraldehyde is :

A. vinegar

B. 40% HCHO

 $C.(CH_3CHO)_3$ 

 $\mathsf{D.}\, C_6H_5CHO$ 

Answer: C



131. In the following sequence of reactions:

 $CH_3 - Br \xrightarrow{KCN} A \xrightarrow{H_3O} B \xrightarrow{LiAlH_4} C$  the end product (C ) is :

A. acetone

B. methane

C. acetaldehdye

D. ethyl alcohol

Answer: D

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**132.** The correct statement regarding a carbonyl compound with a hydrogen atom on its alphacarbon, is

A. A carbonyl compound with a hydrogen atom on its alpha-carbon

rapidly equilibrates with its corresponding enol and this process is

known as carbonylation.

B. A carbonyl compound with a hydrogen atom on its alpha-carbon

rapidly equilibrates with its known as keto-enol automerism.

- C. A carbonyl compound with a hydrogen atom on its alpha-carbon never equilibrates with its corresponding enol.
- D. A carbonyl compound with a hydrogen atom on its alpha-carbon

rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone eqilibrium.

#### Answer: B



**133.** An isomer A of  $C_6H_{13}Cl$  on hydrolysis by moist silver oxide gives B. The compound B on oxidation gives C. The compound C on esterification with ethyl alcohol gives ethyl-2,2-dimethyl butanoate . Which of the following is A ?

$$\begin{array}{l} \mathsf{A.} \ C_{2}H_{5} - \displaystyle \bigcup_{l}^{Cl} & - C_{2}H_{5} \\ & \bigcup_{l}^{CH_{3}} & \\ \mathsf{CH_{3}} \\ \mathsf{B.} \ C_{2}H_{5} - \displaystyle \bigcup_{l}^{l} & - CH_{2} - Cl \\ & \bigcup_{CH_{3}}^{L} & - CH_{2} - Cl \\ \mathsf{C} \ (CH_{3})CH - CH_{2} - CH_{2} - Cl \\ \mathsf{D.} \ (CH_{3})_{2}CH - \displaystyle \bigcup_{l}^{CH_{3}} & \\ & \bigcup_{CH_{3}}^{CH_{3}} - Cl \\ & \bigcup_{CH_{3}}^{CH_{3}} & \\ \end{array}$$

#### Answer: B

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

 $I_2$  containing  $Na_2CO_3$  ?

A. Ethyl alcohol

B. Acetone

C. Both (A) and (B)

D. Methyl alcohol

### Answer: C



135. The end product in the following sequence of reaction is

 $HC \equiv CH rac{1\,\%\,HgSO_4}{20\,\%\,H_2SO_4} \ A \stackrel{CH_3MgX}{\longrightarrow} B \stackrel{|0|}{\longrightarrow}$ 

A. acetic acid

B. isopropyl alcohol

C. acetone

D. ethanol

Answer: C



**136.** 
$$A \xrightarrow{HCN} B \xrightarrow{HCl}_{H_2O} CH_3 - \begin{array}{c} CH_3 & H \\ | & | \\ CH_3 & COOH \end{array}$$

Which of the following is 'A' in the above series of reactions ?

A. 3-Methylbutanal

B. 2,3-Dimethylpropanal

C. 2,2-Diethylpropanal

D. 2,2-Dimethylpropanal

Answer: D

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137. Identify the WRONG statement from the following .

A. Salicylic acid is a monobasic acid.

B. Methyl salicylate is an ester.

C. Salicylic acid gives voilet colour with neutral ferric chloride as well

as brisk effervescence with sodium bicarbonate.

D. Methyl salicylate does not occur in natural oils.

#### Answer: D

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138. In the following sequence of reactions :

 $ext{Toluene} \stackrel{KMnO_4}{\longrightarrow} A \stackrel{SOCl_2}{\longrightarrow} B \stackrel{H_2 \,/\, Pd}{\overset{BaSO_4}{\longrightarrow}} C$ 

the product C is :

A.  $C_6H_5COOH$ 

 $\mathsf{B.}\, C_6H_5CH_3$ 

 $\mathsf{C.}\, C_6H_5CH_2OH$ 

D.  $C_6H_5CHO$ 

Answer: D



**139.** An organic compound 'X' having molecular formula  $C_5H_{10}O$  yield phenylhydrazone and gives negative response to the iodoform test and Tollens test . It produces n-pentane on reduction. 'X' could be

A. pentanal

B. pentan-2-one

C. pentan-3-one

D. n-amyl alcohol

#### Answer: C

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**140.** Among the following compounds, the one (s) that gives (gives) effervescence with aqueous  $NaHCO_3$  solution is (are) :

(I)  $(CH_3CO)_2O$  , (II)  $CH_3COOH$ 

# (III) PhOH , (IV) $CH_3COCHO$

A. I and II

B. I and III

C. only II

D. I and IV

Answer: A

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141. Which of the following acid does NOT contain -COOH group ?

A. Ethanoic acid

B. Picric acid

C. Benzoic acid

D. salicyclic acid

### Answer: B



142. What is the formula of Acrolein ?

A.  $CH_2 = CH - CHO$ 

 $\mathsf{B.}\,CH_2=CH-CN$ 

$$\mathsf{C.}\,CH_2=CH-COOH$$

$$\mathsf{D}.\,CH_2=CH-CONH_2$$

#### Answer: A

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143. Identify Z in the following reaction :

$$2H_3CCOCH_3 \stackrel{i_{\cdot}Ba(OH)_2}{\underset{ii_{\cdot}\Delta,H^+}{\longrightarrow}} Z$$

A.  $H_3CCH_2CO_2H$ 

B.  $2H_3CCO_2H$ 

# $\mathsf{C}.\,H_3CCOCH_2CO_2H$

D.  $H_3C- \mathop{C}\limits_{\substack{\mid\ CH_3}} = CHCOCH_3$ 

Answer: D

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**144.** 
$$CH_3CH_2COOH \xrightarrow[RedP]{Cl_2} (A) \xrightarrow[RedP]{Alc.KOH} (B)$$

What is (B)?

A.  $CH_3 - CH_2 - CO - Cl$ 

 $\mathsf{B}. \, CH_3 - CH_2 - CHO$ 

 $\mathsf{C}.\,H_2C=CH-COOH$ 

 $\mathsf{D.} ClCH_2 - CH_2 - COOH$ 

#### Answer: C

145. Iodoform can be prepared from all except

A. propan-2-ol

B. butan-2-one

C. propan-1-ol

D. acetophenone

Answer: C

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146. Acetic acid is treated with  $Ca(OH)_2$  and the product so obtained is

subjected to dry distillation. The final product is

A. ethanol

B. propanol

C. propanone

D. ethanal

Answer: C

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**147.** The IUPAC name of lactic acid is \_\_\_\_\_\_.

A. 2-hydroxyethanoic acid

B. 2-hydroxypropanoic acid

C. 3-hydroxybutanoic acid

D. 2-hydroxybutanoic acid

Answer: B

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148. which is NOT react with Na:

A.  $C_2H_5OH$  OHB.  $CH_3 - \overset{OH}{C}H - CH_3$ C.  $CH_3 - O - CH_3$ 

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

Answer: C

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149. The compound has one alcoholic and one aldehydic functional group

A. Aldol

:

B. Cyanohydrin

C. Grignard reagent

D. Acetoacetate

### Answer: A



### 150. How many C-atoms are there in isopropyl propionate?

A. 5

B. 4

C. 6

D. 7

#### Answer: C

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151. This does NOT react with Fehling's solution :

A.  $CH_3CHO$ 

 $\mathsf{B.}\left(CH_{3}\right)_{2}CO$ 

C. HCHO

D. HCOOH

Answer: B

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# **152.** The number of aldehdes of molecular formula $C_5 H_{10}O$ is :

A. 2

B. 3

C. 5

D. 4

Answer: D

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153. This does NOT convert a ketone to an alcohol :

A. Zn/Hg+HCl

B.  $H_2$ /Raney Ni

C.  $LiAlH_4$ 

D.  $Na/Hg + H_2O$ 

# Answer: A

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**154.** 
$$H_3CCH_2CO_2H \xrightarrow{P_2O_5} X \xrightarrow{H_2O} Y \xrightarrow{SoCl_2} Z$$

Identify X,Y and Z.

A. X :  $H_2C = CHCO_2H$ 

 $Y \colon HOCH_2CHOHCO_2H$ 

 $Z \colon HOH_2 \mathrm{CC} HOHCOCl$ 

 $\mathsf{B}. X: (H_3 \mathrm{CC} H_2 CO)_2 O$ 

 $Y \colon H_3 \mathrm{CC} H_2 CO_2 H$ 

 $Z: H_3 CCH_2 COCl$ 

 $\mathsf{C}.\,X\colon (H_3\mathrm{CC}O)_2O$ 

 $Y: H_3 CCO_2 H$ 

 $Z{:}\,ClCH_2COCl$ 

D.  $X: (H_3 CCH_2 CO)_2 O$ 

 $Y: H_3 CCO_2 H$ 

 $Z: H_3 CCOCl$ 

Answer: B



**155.** Reaction of carbonyl compound with one of the following reagents involves nucleophilic addition followed by elimination of water. The reagent is:

A. hydrocyanic acid

- B. sodium hydrogen sulphite
- C. a Grignard reagent

D. Hydrazine in presence of feebly acidic solution

#### Answer: D

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156. Nitrations of which among the following compounds yields cyclonite

?

A. formaldehyde

B. Benzaldehyde

C. Urotrophine

D. Acetaldehyde-ammonia

Answer: C

**157.** which of the following does not give a precipitate with 2,4dinitrophenyl hydrazine and does not react with metallic sodium. It could

be

A.  $CH_3 - CH_2 - CHO$ 

- $\mathsf{B}.\,CH_3-CO-CH_3$
- $\mathsf{C.}\, CH_2 = CH CH_2OH$
- $\mathsf{D}.\,CH_2=CH-O-CH_3$

## Answer: D

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**Evaluation Test** 

**1.** Tautomerism is NOT exhibit by \_\_\_\_\_.

A. 📄



Answer: A



**2.** Fehling solution is a mixture of two solutions. While one solution contains  $CuSO_4$ , the other contains

```
CH(OH)COOK
A. |
CH(OH)COOK
COONa
B. |
COONa
COOH
C. |
COOH
```



# Answer: D



3. Benzaldehyde react with Methyl amine to give

A.  $C_6H_5NH_2$ 

 $\mathsf{B.}\, C_6H_5CH_2NH_2$ 

 $\mathsf{C}.\, C_6G_5CN=NCH_3$ 

D.  $C_6H_5CONH_2$ 

## Answer: C

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**4.** The best oxidising agent for oxidation of  $CH_3 - CH = CH - CHO$ 

to  $CH_3 - CH = CH - COOH$  is \_\_\_\_\_.

A. conc.  $HNO_3$ 

B. Alkaline  $KMnO_4$ 

C. Acidified  $K_2 C r_2 O_7$ 

D.  $Ag(NH_3)_2^+$ 

Answer: D

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5. The acid produced (A) in the sequence given below is :

 $C_2 H_5 I \stackrel{alc\,.\,KOH}{\longrightarrow} X \stackrel{Br_2}{\underset{\mathrm{CC}l_4}{\longrightarrow}} Y \stackrel{KCN}{\longrightarrow} Z \stackrel{H_3O^+}{\longrightarrow} A \ .$ 

A. Succinic acid

B. Malonic acid

C. oxalic acid

D. Maleic acid

# Answer: A



**6.** Ozonolysis of  $C_7H_{14}$  gave 2-methylpentan-3-one. The alkene is

A. 2-ethyl-3-methylbut-1-ene

B. 3-ethyl-2-methylbut-3-ene

C. 2,5-diethyl-3,4-dimethylhex-3-ene

D. 3-ethyl-2-methylbut-1-ene

## Answer: A



7. A mixture of benzaldehyde and formaldehyde on heating with aqueous

NaOH solution gives

A. benzyl alcohol and sodium formate

B. sodium benzoate and methyl alcohol

C. sodium benzoate and sodium formate

D. benzyl alcohol and methyl alcohol

# Answer: A

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$$\textbf{8.} CH_{3}CHO + HCHO \xrightarrow[]{\text{dil. NaOH}} A \xrightarrow[]{HcN}_{H_{3}O^{+}} B$$

the structure of compound B is

A. 
$$CH_2 = CH - \mathop{C}_{OH} H - COOH$$
  
B.  $CH_2 = CH - \mathop{C}_{OH} H - OH$   
 $\mathop{|}_{CN}$ 

C. 
$$CH_3-CH_2-CH-COOH$$
  
 $\cup \\ OH$   
D.  $CH_3-CH-COOH$   
 $\cup \\ OH$ 

Answer: A

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9. The increasing order of the rate of HCN addition of compound a-d is

- (i) HCHO
- (ii) CH<sub>3</sub>COCH<sub>3</sub>

(iii) PhCOCH<sub>3</sub>

(iv) PhCOPh

$$\begin{array}{l} \mathsf{A}.\,(i) < (ii) < (iii) < (iv) \\ \\ \mathsf{B}.\,(iv) < (ii) < (iii) < (i) \\ \\ \mathsf{C}.\,(iv) < (iii) < (ii) < (i) \\ \\ \\ \mathsf{D}.\,(iii) < (iv) < (ii) < (i) \\ \end{array}$$

# Answer: C



10. In a reaction of  $C_6 H_5 Y$  the major product (~>60~%~) is m-isomer, so

the group Y is

- $\mathsf{A.}-NH_2$
- $\mathsf{B.}-COOH$
- $C. CH_3$
- $\mathsf{D.}-Cl$

Answer: B

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11. Identify Z in the following sequence of reactions -

 $CH_3COONH_4 \stackrel{\Delta}{\longrightarrow} X \stackrel{P_2O_5}{\longrightarrow} Y \stackrel{H_2 rac{\emptyset}{H}}{\longrightarrow} Z$ 

A.  $CH_3 - CH_2 - CO - NH_3$ 

- B.  $CH_3 CN$
- $C. (CH_3CO)_2O$
- D.  $CH_3 COOH$

#### Answer: D

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12. What is Z in the following sequence of reactions?

 $\begin{array}{c} \text{Phenol} \xrightarrow{Zn} X \xrightarrow{CH_3Cl} Y \xrightarrow{\text{Alkaline}} Z \text{ Phe} \\ \xrightarrow{\text{dust}} X \xrightarrow{\text{Alhyd. } AlCl_3} Y \xrightarrow{\text{Alkaline}} Z \text{ Phe} \end{array} \end{array}$ 

A. benzaldehyde

B. benzoic acid

C. benzene

D. toluene

Answer: B

13. When  $CH_2 = CH - COOH$  is reduced with  $LiAlH_4$  the compound

obtained will be

A.  $CH_3 - CH_2 - COOH$ 

 $\mathsf{B.}\,CH_2=CH-CH_2-OH$ 

 $\mathsf{C.}\,CH_3-CH_2-CH_2-OH$ 

D.  $CH_3 - CH_2 - CHO$ 

# Answer: B

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14. Among the following acids, which has the lowest  $pK_a$  value?

A.  $CH_3 - COOH$ 

 $\mathsf{B.}\,H-COOH$ 

 $C. (CH_3)_2 CH - COOH$ 

 $\mathsf{D.}\,CH_3-CH_2-COOH$ 

Answer: B

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15. Which of the following compound is resistant to nucleophilic attack by

hydroxyl ions?

A. Methyl acetate

**B.** Acetonitrile

C. Acetamide

D. Diethyl ether

Answer: D

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16. Saponification of ethyl benzoate with caustic soda as alkali gives

A. benzyl alcohol, ethanoic acid

B. sodium benzoate , ethanol

C. benzoic acid , sodium ethoxide

D. Phenol, ethanoic acid

#### Answer: B

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17. The smallest ketone and its next homologue are reacted with  $NH_2OH$  to form oxime.

A. two different oximes are formed

B. three different oximes are formed

C. two oximes are optically active

D. all oximes are optically active

# Answer: B

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**18.** Which of the following combination of aldehydes gives cross cannizzaro reaction ?

A.  $CH_3CHO, HCHO$ 

 $\mathsf{B.}\, C_6H_5CHO,\, CH_3CHO$ 

 $\mathsf{C.}\, C_6H_5CHO,\,HCHO$ 

D. All of these

Answer: C

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**19.** Which of the following reagents react differently with HCHO,  $CH_3CHO$  and  $CH_3COCH_3$ ?

A. HCN

 $\mathsf{B.}\, NH_2 NH_2$ 

 $\mathsf{C}.NH_2OH$ 

D.  $NH_3$ 

Answer: D

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