CHEMISTRY

BOOKS - MODERN PUBLICATION CHEMISTRY (KANNADA ENGLISH)

ALDEHYDES , KETONES AND CARBOXYLIC ACIDS

Level I Multiple Choice Questions Carboxylic Acids Nomenclature Methods Of Preparation

1. When carbon dioxide is passed through an ethereal solution of CH_3MgBr and the product is treated with mineral acid , we get ,

A. Ethanal

B. Ethanol

C. Ethanoic acid

D. Propanone.

Answer: C

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2. When calcium benzoate is distilled with calcium formate , the product is :

A. Benzoic acid

B. Benzene

C. Benzaldehyde

D. Benzophenone.

Answer: C

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3. Methanoic acid is manufactured by the reaction of carbon monoxide and :

A. $NaOH$

B. dil . HCl

C. PCl_5

D. conc . H_2SO_4.

Answer: A

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4. Calcium acetate on distillationn gives :

A. Acetone

B. Acetic acid

C. Acetaldehyde

D. Formaldehyde.

Answer: A

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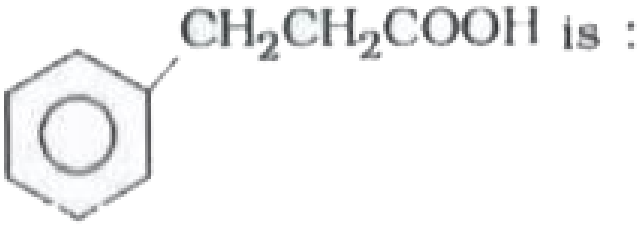
5. The IUPAC name of the compound us ,



A. Propyl benzoic acid

B. 3- Benzene propanoic acid

C. 3- Phenyl propanoic acid

D. 3- Phenyl butanoic acid.

Answer: C

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6. Which of the following acid occurs in ants ?

A. Formic acid

B. Acetic acid

C. Propionic acid

D. Oxalic acid.

Answer: A

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7. Formic acid is manufactured on large scale by treating X with sodium hydroxide under a pressure of a 1 atm and 473 K. X is ,

A. CH_3OH

B. CH_4

C. CO

D. H_2O

Answer: C

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8. Acetic acid is obtained when :

A. glycerol is heated with conc . H_2SO_4

B. acetaldehyde is oxidised with $K_2Cr_2O_7$ and H_2SO_4

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

D. methyl alcohol is oxidised with $KMnO_4$ and H_2SO_4.

Answer: B

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9. Formic acid is obtained when :

A. calcium formate is heated with calcium acetate

B. calcium acetate is heated with conc .H_2SO_4

C. acelaldehyde is oxidised with $K_2Cr_2O_7$ and H_2SO_4

D. glycerol is heated with oxalic acid at 383K.

Answer: D

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10. An aliphatic hydroxy acid is :

A. Malonic acid

B. Salicylic acid

C. Maleic acid

D. Succinic acid.

Answer: C

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Level I Multiple Choice Questions Properties Of Carboxylic Acids

1. Which of the following has maximum boiling point

A. CH_3COOH

B. $HCOOH$

C. C_2H_5COOH

D. C_3H_7COOH.

Answer: D

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2. Acetic acid can be reduced by $LiAlH_4$ to :

A. acetaldehyde

B. actone

C. ethyl alcohol

D. ethane.

Answer: C

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3. In the reaction, $CH_3COOH \xrightarrow{NH_3} A \xrightarrow{\text{Heat}} B \xrightarrow{P_2O_5} C$ C is :

A. Ammonium acetate

B. Acetonitrile

C. Acetic anhydride

D. Ethyl acetate.ss

Answer: B

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4. In the reaction :

$CH_3COOH \xrightarrow{p, Cl_2} A \xrightarrow{NH_3\,(\text{excess})} B$ B is :

A. Acetamide

B. Glycine

C. Ammonium acetate

D. Methane.

Answer: B

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5. Benzoic acid on treatment with HNO_3 in the presemce of H_2SO_4 gives :

A. m- Nitrobenzoic acid

B. Nitro benzene

C. o- Nitrobenzoic acid

D. m- Sulpho benzoic acid.

Answer: A

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6. Distillation of sodium salt of benzoic acid with soda lime gives:

A. Benzene

B. Toluene

C. Benzaldehyde

D. Xylene.

Answer: A

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7. Which of the following is the weakest acid ?

A. CH_3COOH

B. $Cl_2CHCOOH$

C. $ClCH_2COOH$

D. $HCOOH.$

Answer: A

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8. The reaction , $RCH_2CH_2COOH \xrightarrow[Br_2]{\text{Red P}} RCH_2\underset{\underset{Br}{|}}{CH}COOH$ is called :

A. Reimer Tiemann reaction

B. Hell Volhard Zelinsky reaction

C. Cannizzaro 's reaction

D. Sandmeyer 's reaction.

Answer: B

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9. The conversion of a carboxylic acid to α - bromo- carboxylic acid using red phosphorus and bromine is a:

A. Cannizzaro 's reaction

B. Aldol condensation

C. Hell Volhard Zelinsky reaction

D. Kolbe ,s reaction.

Answer: C

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10. Carboxylic acids on reduction with $LiAlH_4$ give :

A. Alkanes

B. Alcohols

C. Alkenes

D. Aldehydes.

Answer: B

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11. Carboxylic acids are reduced by red P and HI to :

A. Alkanes

B. Alcohols

C. Alkenes

D. Aldehydes.

Answer: A

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12. Formic acid and acetic acid may be distinguished by the reaction with :

A. Sodium metal

B. 2,4- Denitrophenyl hydrazine

C. Sodium ethoxide

D. Dil . Acidic potassium permanganate .

Answer: D

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13. Formic acid reacts with conc . H_2SO_4 to give :

A. Oxalic acid

B. Formaldehyde

C. CO

D. CO_2

Answer: C

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14. The weakest acid among the following is :

A. $ClCH_2COOH$

B. CH_3CH_2COOH

C. $CH_3CH_2CH_2COOH$

D. CH_3COOH.

Answer: C

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15. Which of the following reagents does not give acid chloride on treating with an acid ?

A. PCl_5

B. PCl_3

C. $SOCl_2$

D. Cl_2

Answer: D

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16. In the reaction , $CH_3COOH \xrightarrow{Ca(OH)_2} A \xrightarrow{\text{Heat}} B \xrightarrow{NH_2OH} C$, C, C is :

A. CH_3COONH_4

B. $CH_3CH_2NH_2$

C. CH_3CONH_2

D. $(CH_3)_2C = NOH.$

Answer: D

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17. Which of the following groups will decrease the acidic strength of parent acid?

A. $-OH$

B. $-CH_3$

C. $-OCH_3$

D. all.

Answer: D

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18. Decarboxylation of monocarboxylic acids can be carried out by :

A. KOH

B. $Ca(OH)_2$

C. Sodalime

D. Red P.

Answer: C

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19. The main reason for the high acidic nature of carbocylic acids :

$R - COOH \Leftrightarrow R - COO^- + H^+$ is

A. greater resonance stabilization of carbocy -lic acid

B. greter resomance stabilization of carboxy late ion .

C. greater basic nature of conjugate base , $RCOO^-$

D. equal resonance stabilization of both car boxylic acid and carboxylate ion .

Answer: B

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20. In the reaction ,

the main product is :

A. Phenyl acetate

B. Acetophenone

C. Benzoic acid

D. Benzophenone.

Answer: B

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21. Formic acid and acetic acid may be distin guished by the action with :

A. 2, 4- Dinitrophenyl hydrazine

B. Tollen 's reagent

C. Sodium ethoxide

D. Sodium.

Answer: B

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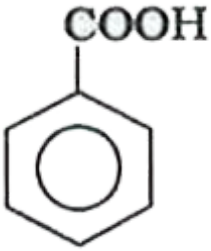
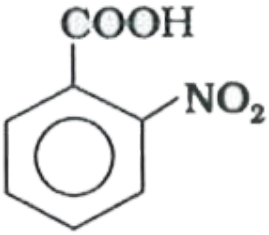
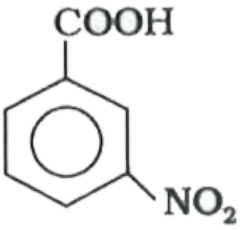
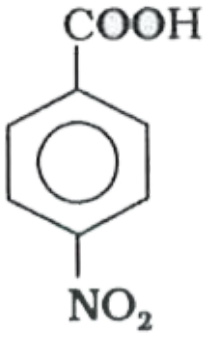
22. Which of the following is weakest acid ?

A. 

B. 

C. 

D. 

Answer: A

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23. Which of the following is strong acid.

A. p- Chlorobenzoic acid

B. p- Nitrobenzoic acid

C. p- Hydroxybenzoic acid.

D. m- Nitrobenzoic acid.

Answer: C

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24. Strongest acid among the following is :

A. CF_3COOH

B. CBr_3COOH

C. CH_3COOH

D. $CCl_3COOH.$

Answer: A

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25. $C_2H_2 \xrightarrow[H_2SO_4]{HgSO_4} A \xrightarrow{O} B$ B is :

A. an acid

B. an aldehyde

C. acetone

D. ethanol.

Answer: A

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26. Propionic acid when treated with Br_2 in the presence of P in sunlight gives :

A. CH_2BrCH_2COOH

B. CH_3CH_2COBr

C. $CH_3CHBrCOOH$

D. $CH_3\underset{\underset{Br}{|}}{C}HCOBr,$

Answer: C

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27. Benzoic acid reacts with $LiAlH_4$ to give

A. Ethylbenzene

B. Methylbenzene

C. Phenol

D. Benzyle alcohol

Answer: D

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28. Vinegar is dilute aqueous solution of

A. Ethanoic

B. Benzoic acid

C. Citric acid

D. Oxalic acid.

Answer: A

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29. Which of the following compounds does not have a carboxyl group ?

A. Benzoic acid

B. Palmitic acid

C. Picric acid

D. Oleic acid

Answer: C

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30. Acetic acid reacts with PCl_3 to give

A. $CH_3 - \overset{\overset{O}{||}}{C} - OPCl_2$

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

C. $CH_3\overset{\overset{O}{||}}{C}Cl$

D. $ClCH_2\overset{\overset{O}{||}}{C} - OH$

Answer: C

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Level I Multiple Choice Questions Dervatives Of Carboxylic Acids

1. The reduction of ethyl acetate with $LiAlH_4$ gives :

A. Ethyl alcohol

B. Ethyl alcohol and acetic acid

C. Ethane and ethyl alcohol

D. Butane only.

Answer: A

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2. Acetyl chloride on treating with ammonia gives :

A. Acetylamine

B. Aminoacetyl chloride

C. Acetamide

D. Amine

Answer: C

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3. Ethyl acetate reacts with NH_3 to give:

A. Ethylamine

B. Acetic acid

C. Acetamide

D. Imides.

Answer: C

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4. Ammonium acetate on heating gives :

A. Acetamide

B. Acetic anhydride

C. Acetaldehyde ammonia

D. Acetic acid and ammonia .

Answer: A

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5. When primary amides are treated with P_2O_5, they give :

A. Amines

B. Carboxylic acids

C. Nitriles

D. Alcohols.

Answer: C

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6. The IUPAC name of ethyl - α methyl butyrate is :

A. Ethyl propanoate

B. 1 - Methyl - 2 ethyl butanoate

C. Ethanoic propanoic anhydride

D. Ethyl -2 methy butanoate .

Answer: D

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7. The reaction :

$C_6H_5COCl + H_2 \xrightarrow{Pd, BaSO_4} C_6H_5CHO + HCl$ is called

A. Rosenmund's reaction

B. Sandmeyer's reaction

C. HVZ reaction

D. Cannizzaro 's reaction.

Answer: A

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8. Which of the following functional derivatives of carboxylic acid is least soluble in water ?

A. Acyl chloride

B. Ester

C. Amide

D. Anhydride.

Answer: C

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9. Sodium acetate and acetyl chloride react to give

A. Acetic acid

B. Acetone

C. Acetic anhydride

D. Sodium formate.

Answer: C

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10. Acetamide is :

A. Neutral

B. Acidic

C. Basic

D. Amohoteric

Answer: D

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11. Benzamide reacts with nitrous acid with the evolution of :

A. N_2

B. CO_2

C. NH_3

D. O_2.

Answer: A

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12. Which of the following derivatives of carboxy - lic acid on hydrolysis will give brown precipitate with Nessler 's reagent?

A. Acid anhydride

B. Acid chloride

C. Acid amide

D. Ester.

Answer: C

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13. How many acids and ester are possible for the compound with molecular formula $C_4H_8O_2$?

A. 2 acids +2 esters

B. 4 acids +4 esters

C. 2 acids +4 esters

D. 3 acids +3 esters.

Answer: C

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14. When ethanamide is boiled with aqueous $NaOH$, the gas evolved is :

A. NH_3

B. N_2

C. CO

D. CO, N_2.

Answer: A

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15. Hydrolysis of esters in alkaline medium is known as :

A. Saponification

B. Hydration

C. Esterification

D. Alkalisation .

Answer: A

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16. Which of the following is most reactive towards water ?

A. RCOOCl

B. $RCOOR'$

C. $RCONH_2$

D. $RCOOCOR.$

Answer: A

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17. Acyl halide is formed by reacting PCl_5 with :

A. alcohol

B. ester

C. amide

D. acid

Answer: D

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18. In the preparation of an ester , the commonly used dehydrating agent is :

A. Phosphorus pentoxide

B. Anhydrous aluminium achloride

C. Anhydrous calcium chloride

D. Conc . Sulohuric acid .

Answer: D

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19. The following reaction is called :

$$2CH_3COOC_2H_5 \xrightarrow{OC_5H_5^-} CH_3COCH_2COOC_2H_5$$

A. Perkin 's reaction

B. Tischenko reaction

C. Claisen condensation

D. Schotten Baumann reaction.

Answer: C

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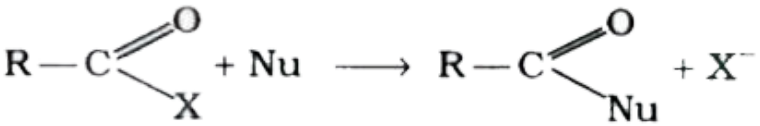
20. The reaction



is fastest when X is :

A. Cl

B. NH_2

C. OC_2H_5

D. $OCOR$

Answer: A

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Level Ii Multiple Choice Questions

1. On heating with P_2O_5 , acetic acid gives :

A. Acetone

B. Acetic anhydride

C. Acetaldehyde

D. Ethyl acetate.

Answer: B

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2. When benzoic acid is treated with sulphuric acid in the presence of SO_3 , the product is :

A. m- Sulphobenzoic acid

B. Sulphanilic acid

C. o- and p -Sulphobenzoic acid

D. Benzene.

Answer: A

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3. Salicylic acid on heating with soda lime $(CaO + NaOH)$ gives :

A. Benzene

B. Benzoic acid

C. Phenol

D. Toluene.

Answer: C

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4. In the reaction :

$CH_3CH_2COOH \xrightarrow{P, Br_2} X \xrightarrow{alc.KOH} Y$ Yis

A. $CH_2 = CHCOOH$

B. $CH_3CH_2CH_2OH$

C. $\underset{\underset{Cl}{|}}{CH_2C} = CHCOOH$

D. $CH_3\underset{\underset{OH}{|}}{C}HCOOH$

Answer: A

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5. When calcium formate is distilled with calcium acetate , the product is :

A. Acetic acid

B. Acetaldehyde

C. acetone

D. ethane.

Answer: B

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6. Acetic anhydric reacts with benzene in the presence of $AlCl_3$ to give:

A. Toluene

B. Acetophenone

C. Benzaldehyde

D. Benzoic acid.

Answer: B

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7. Ethyl benzoate is hydrolysed in the presence of NaOH to ,

A. sodium benzoate , phenol

B. benzoic acid , ethanol

C. toluic acid , ethanol

D. sodium benzoate , ethanol.

Answer: D

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8. Carboxylic acids on reduction with $LiAlH_4$ give :

A. Alkanes

B. Alcohols

C. Aldehydes

D. Alkenes.

Answer: B

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9. In the reaction ,

$CH_3CN \xrightarrow{Na, C_2H_5OH} X \xrightarrow{HNO_2} Y \xrightarrow{K_2Cr_2O_7, H^+} Z$, Z is :

A. CH_3CHO

B. CH_3CH_2NHOH

C. CH_3CH_2COOH

D. CH_3COOH

Answer: D

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10. Hydrolysis of methyl cyanide gives :

A. Formic acid

B. Acetic acid

C. Acetaldehyde

D. Formaldehyde.

Answer: B

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11. Electrolysis of concentrated aqueous solution of an alkali salt of fatty acid gives :

A. Alkanes

B. Alkenes

C. Alkynes

D. Alcohols.

Answer: A

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12. In the reaction ,

$CH_3CH_2COOH \xrightarrow{P, Cl_2} X \xrightarrow{KCN} Y$, Y is :

A. $\underset{\underset{CN}{|}}{CH_2CH_2COOH}$

B. $CH_3CH_2CONH_2$

C. $(CH_3)\underset{\underset{CN}{|}}{C}HCOOH$

D. $\underset{\underset{CN}{|}}{CH_2COOH}$

Answer: C

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13. Which of the following does not have carboxyl group

A. Benzoic acid

B. Aspirin

C. Picric acid

D. Ethanoic acid.

Answer: C

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14. in the α - halogenation of aliphatic acids the catalyst used is :

A. $Pd + BaSO_4$

B. $AlCl_3$(anhyd)

C. P

D. Raney Ni.

Answer: C

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15. Acrylic acid reacts with HBr to give :

A. $Br - \underset{\underset{Br}{|}}{CH_2CH} - COOH$

B. $Br - CH_2 - CH_2 - COOH$

C. $CH_2 = CHCOBr$

D. $CH_3 - \underset{\underset{Br}{|}}{CHCOOH}$

Answer: B

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16. Phenol and benzoic acid can be distinguished by

A. aq. NaOH

B. aq. $NaHCO_3$

C. Neutral $FeCl_3$

D. aq . NH_3

Answer: C

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17. The weakest acid among the following is :

A. CH_3COOH

B. CH_3CH_2OH

C. C_6H_5OH

D. CH_3CONH_2.

Answer: C

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18. The carboxylic acid which does not undergo Hell Volhard Zelinsky reaction is :

A. CH_3COOH

B. $(CH_3)_2CHCOOH$

C. $CH_3CH_2CH_2COOH$

D. $(CH_3)_3CCOOH.$

Answer: A

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19. Which of the following reagents is used to convert - COOH group to CH_3 group ?

A. Red P and HI

B. $LiAlH_4$

C. Na, C_2H_5OH

D. $Zn + HCl.$

Answer: A

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20. A useful derivative to identify carboxylic acids is :

A. Osazone

B. Amide

C. 2,-4 Diphenyl hydrozone

D. Oxime.

Answer: B

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21. Hydrolysis of benzonitrile gives :

A. Benzylamine

B. Phenol

C. Benzene

D. Benzoic acid.

Answer: D

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22. Which of the following cannot reduce Fehling solution ?

A. Formic acid

B. Acetic acid

C. Formaldehyde

D. Acetaldehyde

Answer: B

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23. Acetic anhydride is obtained by the reaction of :

A. acetic acid and sodium

B. acetic acid and water

C. acetic acid and ethyl alcohol

D. acetic acid and P_2O_5.

Answer: D

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24. The correct order of reactivity is :

A. $CH_3COCl > CH_3COOC_2H_5 > CH_3CONH_2$

B. $CH_3COOC_2H_5 > CH_3COCl > CH_3CONH_2$

C. $CH_3CONH_2 > CH_3COCl > CH_3COOC_2H_5$

D. $CH_3COCl > CH_3CONH_2 > CH_3COOC_2H_5$.

Answer: A

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25. Reduction of lactic acid with excess of HI gives :

A. Pyruvic acid

B. Fromic acid

C. Propionic acid

D. Tartaric acid.

Answer: C

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26. In Claisen condensation , two molecules of ester get condensed in the presence of a strong base to give :

A. Acid anhydride

B. β Keto ester

C. Amides

D. Acids.

Answer: B

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27. Which of the following acids in most reactive towards esterification with cyclohexanol ?

A. CH_3COOH

B. CH_3CH_2COOH

C. $HCOOH$

D. $(CH_3)_2CHCOOH.$

Answer: C

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28. When acetic acid reacts with calcium , a gas is evolved . The gas is :

A. H_2

B. CO_2

C. CO

D. $N_2.$

Answer: A

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29. The number of isomeric carboxylic acids posible for C_4H_9COOH are :

A. Four

B. Five

C. Three

D. Six.

Answer: A

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30. In the reaction sequence , $C_2H_5OH \xrightarrow{PBr_3} A \xrightarrow{KCN} B \xrightarrow{H_3O^+} C$,C is

A. Acetic

B. Acetamide

C. Propionic acid

D. Ethylamine.

Answer: C

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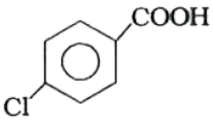
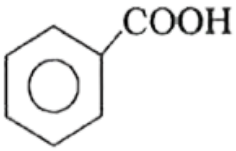
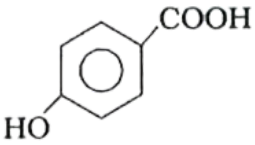
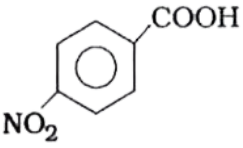
31. The strongest acid among the following is :

A. 

B. 

C. 

D. 

Answer: D

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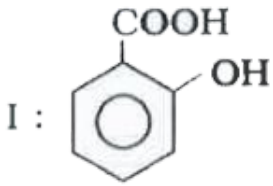
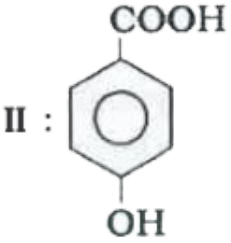
32. The correct order of decreasing acidity of the following is :





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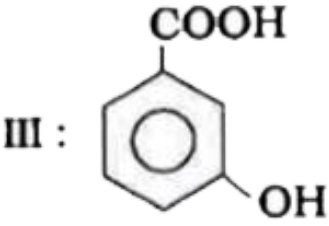

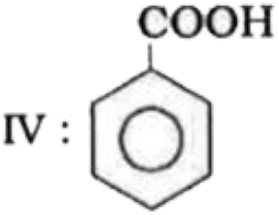

A. $I > II > III > IV$

B. $II > I > III > IV$

C. $I > III > IV > II$

D. $II > I > IV > III.$

Answer: C

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33. In the reaction , n- Hexanenitrile $\xrightarrow[H_2O]{H_3O^+} A \xrightarrow{NaOBr} B$, the product B is :

A. 1- Aminopentane

B. n- Hexane

C. 1- Hexanol

D. 1- Aminohexane .

Answer: A

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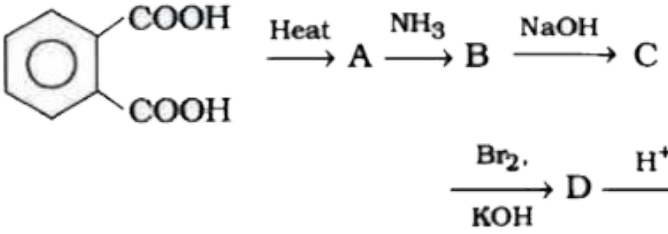

34.

$\xrightarrow{\text{Heat}} A \xrightarrow{NH_3} B \xrightarrow{NaOH} C \xrightarrow[KOH]{Br_2} D \xrightarrow{H^+} E$, the product E is :

A. Salicylic acid

B. Anthranilic acid

C. Benzoic acid

D. o- Nitrobenzoic acid.

Answer: B

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35. Methyl group attached to benzene can be oxidised to carboxyl group by reacting with

A. Fe_2O_3

B. $AgNO_3$

C. $KMnO_4$

D. Cr_2O_3.

Answer: C

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36. Oxidation of toluene with CrO_3 in the presence of $(CH_3CO)_2O$ gives a product 'A' which on treatment with aq. NaOH gives :

A. 2, 4- Diacetyl toluene

B. C_6H_5CHO

C. Benzoic abhydride

D. $C_6H_5COOC_2H_5$.

Answer: B

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37. Grignard reagent and ethyl acetate react to give :

A. acid

B. ketone

C. aldehyde

D. alcohol.

Answer: B

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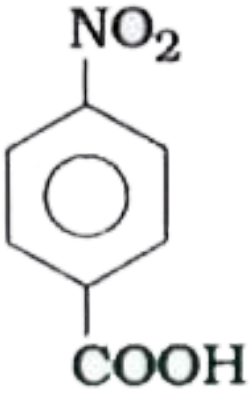
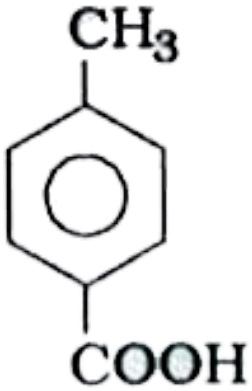
38. Which aromatic acid among the following is weaker than simple benzoic acid ?

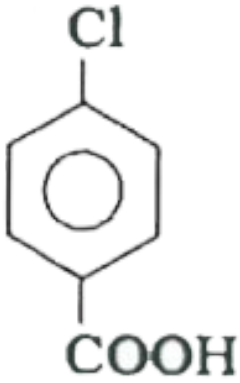
A.

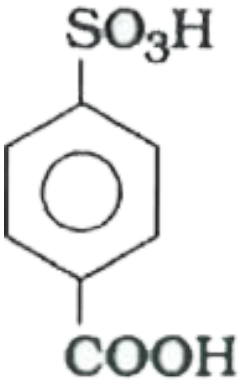


B.



C.



D. 

Answer: B

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39. Which of the following acids has the smallest dissociation constant ?

A. $CH_3CHFCOOH$

B. FCH_2CH_2COOH

C. $BrCH_2CH_2COOH$

D. $CH_3CHBrCOOH.$

Answer: C

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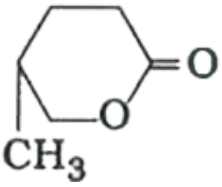
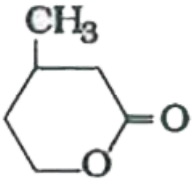
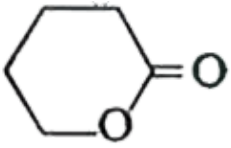
40. The end product of the reaction ,

$$CH_3\underset{\underset{O}{||}}{C}CH_2CH_2CH_2COOH \xrightarrow[H_2O, H^+]{NaBH_4}$$ is :

A. $CH_3\underset{\underset{OH}{|}}{C}CH_2CH_2CH_2COOH$

B. 

C. 

D. 

Answer: B

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41. When acetic acid reacts with ketone , the product formed is :

A. aceto -acetic acid

B. acetone

C. Acetic anhydride

D. ethyl acetate.

Answer: C

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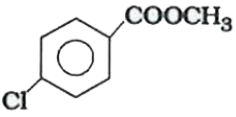
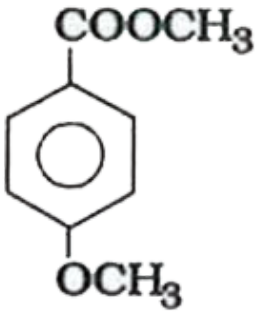
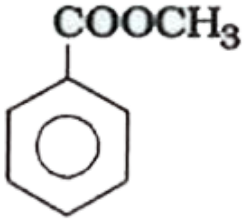
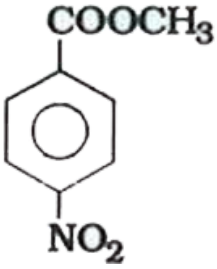
42. Which of the following most readily undergoes hydrolysis ?

A. 

B. 

C. 

D. 

Answer: D

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43. Sodium phthalamide $\xrightarrow{Br_2 . KOH} X \xrightarrow{H_3O^+} Y$ The product Y is :

A. Anthranilic acid

B. o- phenylene diamine

C. terephthalic acid

D. adipic acid

Answer: A

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44. In the reaction ,

$BrCH_2CH_2CH_2Br \xrightarrow[2 . H_3O^+]{1 . alc . KCN} X$ the product X is :

A. Glutaric acid

B. 1,3 - Propanedioic acid

C. Succinic acid

D. Malonic acid.

Answer: A

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45. A halogen compound on hydrolysis with dilute alkali followed by acidification gives acetic acid. The compound is :

A. CH_3CH_2Cl

B. CH_3CCl_3

C. $ClCH_2CH_2Cl$

D. $ClCH_2CHCl_2$.

Answer: B

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46. The product of the reaction , Methanol $+CO \xrightarrow{Rh}$ is :

A. Methanal

B. Ethanal

C. Methanoic acid

D. Ethanoic acid.

Answer: D

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47. $-COOH$ group can be converted to $-NH_2$ group by :

A. Claisen condensation

B. Schmidt reaction

C. Perkin 's reaction

D. Cannizzaro 's reaction.

Answer: B

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48. Benzoic acid may be converted to ethyl benzoate by reaction with :

A. Ethyl chloride

B. Dry HCl , C_2H_5OH

C. Ethanol

D. Sodium ethoxide.

Answer: B

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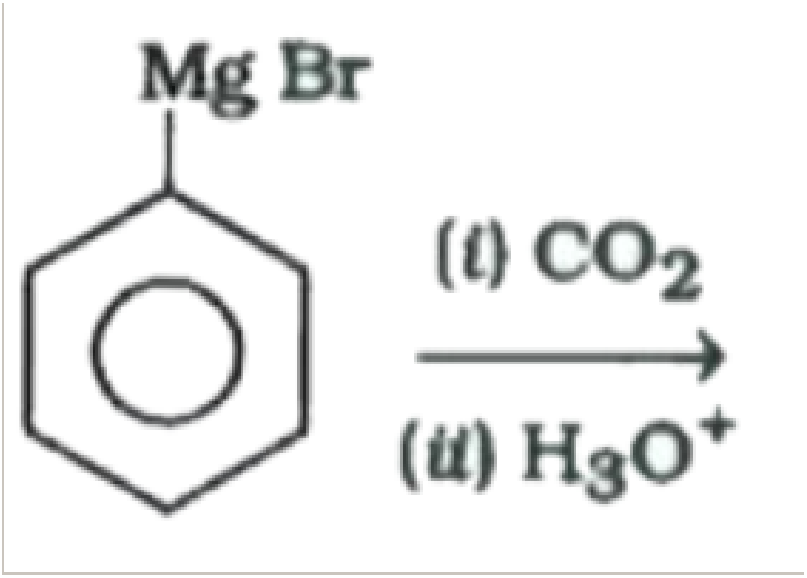
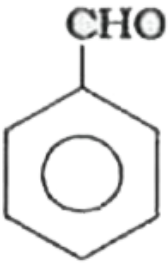
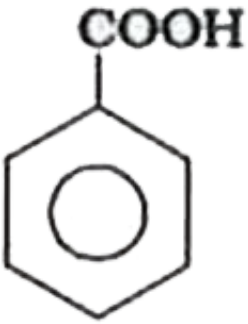
49. 

$\xrightarrow[(ii)\, H_3O^+]{(i)\, CO_2}$

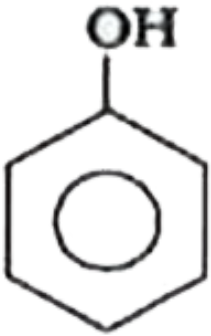
In the above reaction , product P is



A.



B.



C.

D. $C_6H_5COC_6H_5$.

Answer: B

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50. The - Oh group of an alcohol or COOH group of a carboxylic acid can be replaced by using:

A. hypochlorous acid

B. chlorine

C. hydrochloric acid

D. phosphorus pentachloride.

Answer: B

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51. In a set of reactions propionic acid yielded compound D, $CH_3CH_2COOH \xrightarrow{SOCl_2} B \xrightarrow{NH_3} C \xrightarrow[Br_2]{KOH} D$ The structure of D would be :

A. CH_3CONH_2

B. $CH_3CH_2NHCH_3$

C. $CH_3CH_2NH_2$

D. $CH_3CH_2CH_2NH_2$.

Answer: C

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52. Which of the following presents the correct order of the acidity in the given compounds ?

A.

$$FCH_2COOH > CH_3COOH > BrCH_2COOH > ClCH_2COOH$$

B.

$$BrCH_2COOH > ClCH_2COOHgrFCH_2COOH > CH_3COOH$$

C.

$$FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$$

D.

$$CH_3COOH > BrCH_2COOH > ClCH_2COOH > FCH_2COOH$$

.

Answer: C

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53. Propionic acid with Br_2 / P yield a dibromo product . Its structure will be

A. $H - \overset{\overset{Br}{|}}{\underset{\underset{Br}{|}}{C}} - CH_2COOH$

B. $CH_2Br - CH_2COBr$

C. $CH_3 - \overset{\overset{Br}{|}}{\underset{\underset{Br}{|}}{C}} - COOH$

D. $CH_2(Br) - CH(Br) - COOH$

Answer: C

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54. Identify the correct oreder of boiling points of the following compounds :

$\underset{(1)}{CH_3CH_2CH_2CH_2OH}$ $\underset{(2)}{CH_3CH_2CH_2CHO}$

$\underset{(3)}{CH_3CH_2CH_2COOH}$

A. $1 > 2 > 3$

B. $3 > 1 > 2$

C. $1 > 3 > 2$

D. $3 > 2 > 1$

Answer: B

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55. The relative reactivities of acyl compounds towards nucleophilic substitution are in the order of :

A. Ester $>$ Acyl chloride $>$ Amide $>$ Acid anhydride

B. Acid anhydride $>$ Amide $>$ Ester $>$ Acyl chloride

C. Acyl chloride $>$ Amide $>$ Acid anhydride $>$ amide

D. Acyl chloride $>$ Acid anhydride $>$ Ester $>$ Amide

Answer: D

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56. Which of the following compound will have the smallest pK_a value ?

A. Benzoic acid

B. Fromic acid

C. Acetic acid

D. Phenylacetic acid

Answer: B

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57. When propanoic acid is treated with aqueous sodium - bicarbonatate, CO_2 is liberated. The "C" of CO_2 comes from

A. methyl group

B. carboxylic acid group

C. methylene group

D. bicarbonate

Answer: B

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58. Formic acid and acetic acid may be distinguished by the reaction with :

A. $NaHCO_3$

B. dil. Acidified $KMnO_4$ solution

C. 2, 4- dinitrophenyl hydrazine

D. Na metal

Answer: C

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59. $CH_3CH_2COOH \xrightarrow[redP]{Cl_2} A \xrightarrow{alcKOH}$ B,B is

A. CH_3CH_2COCl

B. CH_3CH_2CHO

C. $CH_2 = CHCOOH$

D. $ClCH_2CH_2COOH.$

Answer: C

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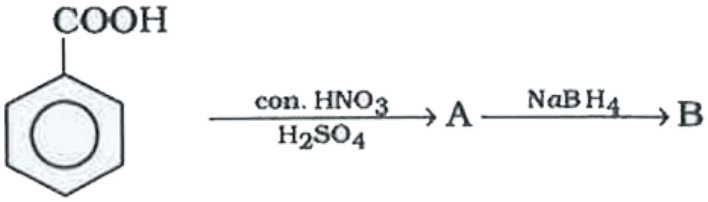
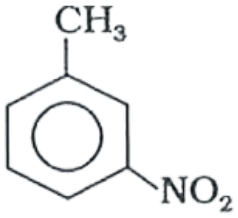
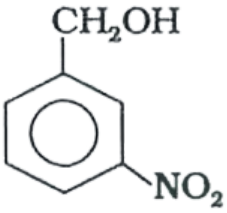
60. The product (B) of the reaction is



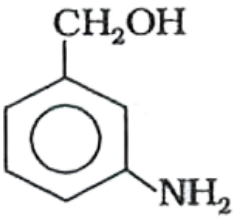
A.

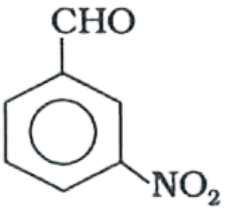


B.



C.



D. 

Answer: B

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Level Iii Multiple Choice Questions

1. The correct order of increasing basicity of the given conjugate bases $(R = CH_3)$ is :

A. $RCO\overline{O} < \overline{N}H_2 < \equiv \overline{C} < \overline{R}$

B. $RCO\overline{O} < HC \equiv \overline{C} < \overline{N}H_2 < \overline{R}$

C. $RCO\overline{O} < HC \equiv \overline{C} < \overline{R} < \overline{N}H_2$

D. $\overline{R} < HC \equiv \overline{C} < RCO\overline{O} < \overline{N}H_2.$

Answer: B

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2. The strongest acid among the following is

A. $CH_3CH_2CH(Cl)CO_2H$

B. $ClCH_2CH_2CH_2COOH$

C. CH_3COOH

D. $HCOOH$

Answer: A

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

A. Molisch reagent

B. Neutral $FeCl_3$

C. Aqueous $NaOH$

D. Tollen 's reagent.

Answer: B

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4. In the reaction :

$CH_3COOH \xrightarrow{LiAlH_4} A \xrightarrow{PCl_5} B \xrightarrow{alcKOH} C$ the product C is

A. acetaldehyde

B. Ethyne

C. acetaldehyde

D. Ethylene

Answer: C

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5. In the following sequence of reactions : Toluene $\xrightarrow{KMnO_4} A \xrightarrow{SOCl_2} B \xrightarrow[H_2/Pd]{H_2/Pd} C$

A. C_6H_5COOH

B. $C_6H_5CH_3$

C. $C_6H_5CH_2OH$

D. $C_6H_5CHO.$

Answer: D

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Recent Examination Questions

1. 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 $>$ p- toluic acid $>$ benzoic acid

C. p- toluic acid $>$ benzoic acid $>$ o- toluic acid

D. o- toluic acid $>$ benzoic acid $>$ p- toluic acid.

Answer: B

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2. The compound formed when calcium acetate and calcium formate is dry distilled

A. Acetone

B. Acetaldehyde

C. Benzaldehyde

D. Acetophenone.

Answer: B

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3. The acid strength of active methylene group in :

(i) $CH_3COCH_2COOC_2H_5$

(ii) $CH_3COCH_2COCH_3$

(iii) $C_2H_5OO\mathbb{C}H_2COOC_2H_5$ decreases as :

A. (i) $>$ iii $>$ ii

B. I $>$ (ii) $>$ iii

C. iii $>$ I $>$ ii.

D. $iii > i > ii.$

Answer: C

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4. Acetic acid is treated with $Ca(OH)_2$ and the product so obtained is subjected to dry distillation . The final product is :

A. propanone

B. ethanal

C. ethanol

D. propanal

Answer: A

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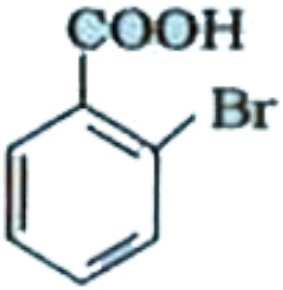
5. In the sequence of following reactions :



$$P \xrightarrow[(2)\,Sn/HCl]{(1)\,Br_2} Q \xrightarrow[(2)\,H_2O/H_3PO_2]{\overset{(1)\,NaNO_2/HCl}{\overset{273}{\longrightarrow}}\ \overset{278K}{}} R \xrightarrow[OH^-]{KMnO_4}$$

the starting compound P is :

A. o- bromotoluene

B. o- nitro toluene

C. p- nitro toluene

D. m- nitro toluene.

Answer: C

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6. Consider the acid strength of the carboxylic acids :

(i) $PhCOOH$

(ii) $o - NO_2C_6H_4COOH$

(iii) $p - NO_2C_6H_4COOH$

(iv) $m - NO_2C_6H_4COOH$

A. $i > ii > iii > iv$

B. $iv > iii > ii > i$

C. $ii > iii > iv > i$

D. $ii > iv > iii > i.$

Answer: C

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7. Which of the following is the correct sequence of relative acidic strength ?

A. $FCH_2COOH > ClCH_2COOH > BrCH_2COOH$

B. $ClCH_2COOH > BrCH_2COOH > FCH_2COOH$

C. $BrCH_2COOH > ClCH_2COOH > FCH_2COOH$

D. $ClCH_2COOH > FCH_2COOH > BrCH_2COOH.$

Answer: A

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8. Benzaldehyde and acetone can best distinguished using

A. Fehling's solution

B. Sodium hydroxide solution

C. 2,4- DNP

D. Tollen 's reagent,

Answer: A

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9. The compound obtained when acetaldehyde reacts with dilute aqueous sodium hudroxide exhibits

A. geometrical isomerism

B. optical isomerism

C. neither optical nor geometrical isomerism

D. both optical and geometrical isomerism .

Answer: B

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10. The correct sequence of steps involved in the mechanism of Cannizzaro's reaction is

A. nucleophilic attack transfer of H^- and transfer of H^+

B. transfer of H^- , transfer of H^+ and nucelophilic attack

C. transfer of H^+ , nucleophilic attack and transfer of H^-

D. electrophilic attack by OH^- , transfer of H^+ and transfer of H^-.

Answer: A

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11. One mole of an organic compound A with the formula C_3H_8O reacts completely with two moles of HI to from X and Y. When Y is boiled with aqueous alkali it forms Z.Z answers the iodoform test. The compound A is

A. propan -2-o1

B. propan -1-o1

C. a secondary alcohol

D. methoxyethane.

Answer: D

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12. An oxygen containing organic compound upon oxidation forms a carboxylic acid as the only organic product with its molecular mass higher by 14 units. The organic compound is

A. an aldehyde

B. a primary alcohol

C. a secondary alcohol

D. a ketone.

Answer: B

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13. An organic compound 'A' burns with a sooty flame . It is negative towards Tollen's reagent test and positive for Borsche's reagent test . The compound 'A' is

A. Benzaldehyde

B. Acetophenone

C. Acetone

D. Salicylic acid.

Answer: D

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14. HCHO was treated with a reagent . The product formed upon hydrolysis in the presence of an acid gave C_2H_5OH . The reagent X is

A. aqueous KOH

B. alcoholic KOH

C. alcoholic KCN

D. $CH_3Mgl.$

Answer: D

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15. 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: D

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16. The reagent used to distinguish between acetaldehyde and benzaldehyde is

A. Tollen's reagent

B. Fehling's solution

C. 2,4- Dinitrophenyl hydrazine

D. Semicarbazide .

Answer: B

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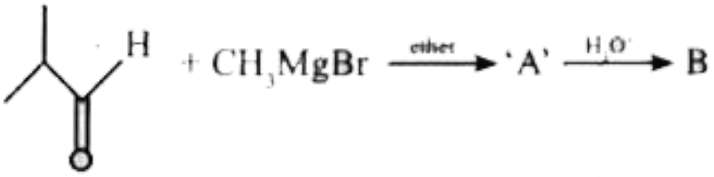
17.



The IUPAC name of 'B' is

A. 3- Methylbutan -2-o1

B. 2- Methylbutan -3-o1

C. 2- Methylbutan -2-o1

D. Pentan -2-o1.

Answer: A

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18. Acetophenone cannot be prepared easily starting from

A. $C_6H_5CH(OH)CH_3$

B. $C_6H_5CH_3$

C. $C_6H_6C \equiv CH$

D. C_6H_6.

Answer: B

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19. Iodoform reaction is answered by all, except

A. $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_2COOH$

B. CH_3CHO

C. CH_3CH_2OH

D. $CH_3CH_2CH_2OH.$

Answer: D

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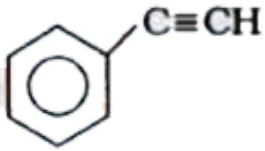
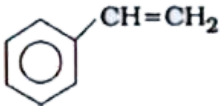
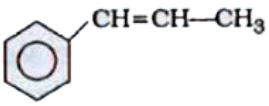
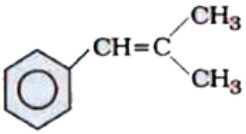
20. $X \xrightarrow[(\text{Reductive})]{\text{Ozonolysis}} Y + Z$

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

A. 

B. 

C. 

D. 

Answer: B

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21. $P \xrightarrow[2.H_3O^+]{1.CH_3MgBr} R \xrightarrow[2.\Delta]{1.dil.NaOH} 4-$ methylpent -3-en-2-one

P is

A. Propanone

B. Ethanamine

C. Ethane nitrile

D. Ethanal.

Answer: C

Watch Video Solution

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

A. Electrophilc addition

B. Nucleophilic substitution

C. Electrophilic substitution

D. Nucleophilic addition.

Answer: D

Watch Video Solution

23. Iodoform can be prepared from all, except

A. propan -1- o1

B. propan -2-o1

C. acetophenone

D. butan -2- one.

Answer: A

Watch Video Solution

Multiple Choice Questions Level I

1. Write the IUPAC name of $CH_3COCH_2CH_2CH_3$.

A. Methy - propylketone

B. 2- Pentanone

C. 3- Pentanone

D. 2- Methyl butanone.

Answer: B

Watch Video Solution

2. Which of the following componds gives a ketone with a Grignard 's reagent ?

A. Fomaldehyde

B. Methyl alcohol

C. Methyl cyanide

D. Methyl iodide.

Answer: C

Watch Video Solution

3. Acetone will be formed by the ozonolysis of :

A. 1- butene

B. 2- butene

C. 2- butyne

D. isobutene.

Answer: D

Watch Video Solution

4. How many isomeric compounds with the molecular formula $C_5H_{10}O$ are possible ?

A. Three

B. Four

C. Five

D. Seven

Answer: D

Watch Video Solution

5. When calcium benzoate is distilled with calcium formate , the product is :

A. benzaldehyde

B. benzophenone

C. phenol

D. benzoic acid.

Answer: A

Watch Video Solution

6. Which of the following is the formula of a saturated alphatic aldehyde ?

A. $C_5H_{11}O$

B. $C_6H_{13}O$

C. $C_5H_{10}O$

D. $C_6H_{14}O$.

Answer: C

Watch Video Solution

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

A. methanol

B. ethane

C. acetylene

D. ether.

Answer: A

Watch Video Solution

8. The total number of isomeric ketones of the molecular formula $C_5H_{10}O$ is :

A. One

B. Two

C. Three

D. Four

Answer: C

Watch Video Solution

9. Acetone can be prepared by the dehydrogenation of (by Cu at $300^{\circ} C$) :

A. ethyl alcohol

B. t- butyl alcohol

C. isopropyl alcohol

D. butyraldehyde.

Answer: C

Watch Video Solution

10. The IUPAC name of diethyl ketone is :

A. Butanal

B. 2- Pentanone

C. 3- Pentanone

D. 2- Butanone.

Answer: C

Watch Video Solution

11. Which of the following compounds is formed on ozonolysis followed by hydrolysis of 2- butene ?

A. Acetone and formaldehyde

B. Acetaldehyde

C. Butyric acid

D. Acetone and acetaldehyde.

Answer: B

Watch Video Solution

12. The IUPAC name of crotonaldehyde is :

A. Propanal

B. But -2- en -1- al

C. But -1- en -2- al

D. Pent -2- en -1- al.

Answer: B

Watch Video Solution

13. The IUPAC name of the compound Cl_3CCHO:

A. Chloral

B. Chloromethanal

C. 2,2,2- Trichloroethanal

D. 3,3,3- Trichloropropanal.

Answer: C

Watch Video Solution

14. In the reaction

$$C_6H_6 + CO + HCl \xrightarrow[AlCl_3]{\text{anhyd}} X + HCl$$

the compound X is :

A. $C_6H_5CH_3$

B. $C_6H_5CH_2Cl$

C. C_6H_5CHO

D. C_6H_5COOH.

Answer: C

Watch Video Solution

15. An acid chloride on reaction with $H_2, Pd - BaSO_4$ gives $(CH_3)_2CHCHO$. This acid chloride on reaction with $CH_3MgBr \mid H_3O^+$ gives

A. $(CH_3)_3COH$

B. $(CH_3)_2CHOH$

C. $(CH_3)_2CHCOCH_3$

D. $(CH_3)_2CHCHO$

Answer: C

Watch Video Solution

16. Acetaldehyde reacts with Grignard reagent (CH_3MgBr). The addition product on hydrolysis gives :

A. isopropyl alcohol

B. propyl alcohol

C. tert - butyl alcohol

D. butyl alcohol .

Answer: A

Watch Video Solution

17. What type of reaction aldehydes and ketones undergo ?

A. Nucleophilic addition

B. Nucleophilic substitution

C. Electrophilic addtion

D. Electrophilic substitution.

Answer: A

Watch Video Solution

18. Silver morror test is not given by :

A. $HCHO$

B. CH_3CHO

C. CH_3COCH_3

D. $CH_3CH_2CHO.$

Answer: C

Watch Video Solution

19. Which of the following is most reactive towards nucleophilic addition reaction ?

A. CH_3CHO

B. CH_3COCH_3

C. $CH_3COC_2H_5$

D. CH_3CH_2CHO.

Answer: A

Watch Video Solution

20. The C- atom in carbonyl group involves :

A. sp hybridisation

B. sp^2 hybridisation

C. sp^3 hybridisation

D. none of these.

Answer: B

Watch Video Solution

21. The reaction of CH_3CH_2MgBr with formaldehyde after acidification gives :

A. an aldehyde

B. a primary alcohol

C. a ketone

D. secondary alcohol.

Answer: B

Watch Video Solution

22. Acetaldehyde reacts with ethyl magnesium bromide to give a product which on hydrolysis gives :

A. Butan -1- 01

B. 2- Methypropan -2- 01

C. Butan -2- 01

D. Pentan -1- 1.

Answer: C

Watch Video Solution

23. The molecule that can give Cannizzaro 's reaction is :

A. acetaldehyde

B. butyraldehyde

C. formaldehyde

D. propionaldehyde.

Answer: C

Watch Video Solution

24. Ketones are less reactive than aldehydes because:

A. C= O group is less polar in ketones

B. of electromeric effect

C. steric hindrance to the attacking reagent

D. none of these.

Answer: C

Watch Video Solution

25. Acetophenone on reduction with Zn//Hg in the presence of HCl gives :

A. Toluene

B. Benzene

C. Ethyl benzene

D. Xylene.

Answer: C

Watch Video Solution

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

A. Cu

B. CuO

C. Cu_2O

D. $Cu_2O + Cu.$

Answer: C

Watch Video Solution

27. A compound that gives a positive iodoform test is

A. 1- Pentanol

B. 2- Pentanone

C. 3- Pentanone

D. Pentanal.

Answer: B

Watch Video Solution

28. The reagent with which both aldehydes and ketones react easily is

A. Tollen 's reagent

B. Schiff s reagent

C. Grignard reagent

D. Fehling solution.

Answer: C

Watch Video Solution

29. Which of the following gives positive Tollen 's

A. acetaldehyde

B. Diethyl ether

C. Acetic acid

D. Acetone.

Answer: A

Watch Video Solution

30. The compound formed by reducing acetone with $LiAlH_4$ is :

A. Propane

B. n- Propyl alcohol

C. Isopropyl alcohol

D. Propylene.

Answer: C

Watch Video Solution

31. Acetaldehyde cyanohydrin on hydrolysis gives :

A. ethylene glycol

B. acetone

C. acetic acid

D. 2 -hydroxypropanoic acid.

Answer: D

Watch Video Solution

32. The reaction

$2C_6H_5CHO \xrightarrow{50\%\, NaOH} C_6H_5COONA + C_6H_5CH_2OH$ is an example of

A. Cannizzaro 's reaction

B. Kolbe 's reaction

C. Sandmeyer reaction

D. Wolff Kishner reaction.

Answer: A

Watch Video Solution

33. Aldehydes give silver mirror test with ammoniacal silver nitrate solution due to the formation of :

A. Ag_2O

B. Ag

C. $\left[Ag(NH_3)_2\right]^+$

D. $AgO.$

Answer: B

Watch Video Solution

34. Benzaldehyde reacts with phenyl hydrazine to form the product .

A. $(CH_3)_2C = NNHC_6H_5$

B. $C_6H_5CH = NNH_2$

C. $C_6H_5CH = NNHC_6H_5$

D. $C_6H_5CH_2NNHC_6H_5.$

Answer: C

Watch Video Solution

35. Benzaldehyde on reduction with $NaBH_4$ gives :

A. Benzoic acid

B. Phenol

C. Benzyl alcohol

D. Benzene.

Answer: C

Watch Video Solution

36. Meta formaldehyde is a :

A. dimer of formaldehyde

B. trimer of formaldehyde

C. tetramer of formaldehyde

D. hexamer of formaldehyde.

Answer: B

Watch Video Solution

37. Acetaldehyde reacts with thionyl chloride to give (the main product):

A. CH_3COCl

B. CH_3CHCl_2

C. CH_3CH_2COCl

D. $CH_3CH_2CHCl_2$.

Answer: B

Watch Video Solution

38. Three moles of acetone condense in the presence of dry HCl to form :

A. phorone

B. mesitylene

C. trioxane

D. paraldehyde.

Answer: A

Watch Video Solution

39. In Clemmensen 's reduction of aldehydes and ketones , the reducing agent used is :

A. $Zn(Hg), HCl$

B. HI , P

C. $LiAlH_4$

D. $NaBH_4$

Answer: A

Watch Video Solution

40. Benzaldehhyde reacts with ammonia to give :

A. Benzoic acid

B. Benzamide

C. Hydrobenzamide

D. Urotropine.

Answer: C

Watch Video Solution

41. At room temperature , in the presence of traces of conc . H_2SO_4 , acetaldehyde polymerises to :

A. metaformaldehyde

B. metaldehyde

C. paraldehyde

D. trioxane.

Answer: C

Watch Video Solution

42. Which of the following is most difficult to oxidise ?

A. Ethanal

B. Butanal

C. Propanone

D. Propanal.

Answer: C

Watch Video Solution

43. With zinc amalgam and hydrochloric acid , carbonyl compounds are reduced to :

A. alcohols

B. ethers

C. alkanes

D. acids

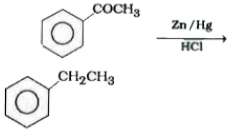
Answer: C

Watch Video Solution

44. Which of the following represents Wolf Kishner reduction reaction ?

A. $RCHO \xrightarrow[KOH\,(\text{glycol})]{NH_2NH_2} RCH_3$

B. $CH_3COCH_3 \xrightarrow{LiAlH_4} CH_3CH(OH)CH_3$

C. 

D. $CH_3COCH_3 \xrightarrow[H_2]{Ni \text{ or } Pt} CH_3CH(OH)CH_3$

Answer: A

Watch Video Solution

45. Which of the following has maximum boiling point ?

A. $CH_3CH_2CH_2CHO$

B. CH_3CH_2CHO

C. CH_3CHO

D. $HCHO$.

Answer: A

Watch Video Solution

46. Aldehydes react with ammonia in the presence of traces of acids to give :

A. Imines

B. Amines

C. Amides

D. Nitriles.

Answer: A

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47. Aldehydes acts as :

A. dehydrating agents

B. reducing agents

C. oxidising agents

D. dehydrogenating no α -hydrogen atoms undergo :

Answer: B

Watch Video Solution

48. Aldehydes having no α hyfrogen atoms undergo :

A. Aldol condensation

B. Cannizzaro 's reaction

C. Rosenmund reaction

D. Schotten Baumann reaction.

Answer: B

Watch Video Solution

49. Cannizzaro's reaction involves :

A. Oxidation

B. Reduction

C. Both oxidation and reudction

D. Decarboxylation .

Answer: C

Watch Video Solution

50. Benzyl alcohol is obtained from benzaldehyde by :

A. Cannizzaro 's reaction

B. Kolbe 's reaction

C. Wurtz reaction

D. Fitting reaction

Answer: A

Watch Video Solution

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

A. Benzyl alcohol

B. Benzoldehyde

C. Benzoic acid

D. Phenol.

Answer: B

Watch Video Solution

52. Which of the following compound will not give yelow ppt with iodine and alkali

A. Ethyl cyanide

B. Acetophenone

C. Methyl acetate

D. Acetamide.

Answer: B

Watch Video Solution

53. The aldol condensation of acetaldehyde results in the formation of :

A. $CH_3\underset{\underset{O}{||}}{C}\underset{\underset{OH}{|}}{C}HCH_3$

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

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

D. $CH_3CH_2OH + CH_3COOH.$

Answer: B

Watch Video Solution

54. When acetaldehyde is treated with phenyl hydrazine , the medium should be :

A. highly basic

B. highly acidic

C. moderately acidic

D. neutral.

Answer: C

Watch Video Solution

55. Aldol condensation of acetaldehyde involves the formation of which of the following intermediates

A. acetate ion

B. a carbonium

C. a carbanion

D. a free radical.

Answer: C

Watch Video Solution

56. If formaldehyde and KOH are heated , the product obtained is :

A. Methanol

B. Acetylene

C. Formic acid

D. Methyl formate ,

Answer: A

Watch Video Solution

57. Benzaldehyde can be prepared by the oxidation of toluene by :

A. acidified $KMnO_4$

B. acidified $K_2Cr_2O_7$

C. CrO_2Cl_2

D. all .

Answer: C

Watch Video Solution

58. Identify Z in the following series,

$$CH_2 = CH_2 \xrightarrow{HBr} X \xrightarrow{\text{hudrolysis}} Y \xrightarrow[I_2 \quad \text{excess}]{Na_2CO_3} Z$$

A. CHI_3

B. C_2H_5I

C. CH_3CHO

D. $CH_2 = CHI.$

Answer: A

Watch Video Solution

59. Crotonaldehyde on reduction with `H_(2) in the presence of nikel gives :

A. Crotonic acid

B. n- Butyl alcohol

C. Butanoic acid

D. Succinic acid.

Answer: B

Watch Video Solution

60. But - 2 enal on reduction with hydroborane (9-BBN) gives :

A. Butan -1- o1

B. Butane

C. But -2 -en -1- o1

D. Butanal.

Answer: C

Watch Video Solution

61. At room temperature formaldehyde is

A. gas

B. liquid

C. solid

D. none of the above.

Answer: A

Watch Video Solution

62. Mesitylene is prepared from :

A. CH_3CHO and concHNO_3

B. CH_3COCH_3 and concH_2SO_4

C. CH_3COCH_3 and conc. HCl

D. CH_3CHO and : conc. H_2SO_4.

Answer: B

Watch Video Solution

63. CH_3COCH_3 can be obtained by :

A. heating acetaldehyde with methanol

B. oxidation of isopropyl alcohol

C. oxidation of isopropionic alcohol

D. reduction of proionic acid.

Answer: C

Watch Video Solution

64. Acetophenone os prepared by the reaction of following in the presence of $AlCl_3$ catalyst :

A. Phenol and acetic acid

B. Benzene and acetone

C. Benzene and acetyl chloride

D. Phenol and acetone .

Answer: C

Watch Video Solution

65. Benzaldehyde when heated with conc . NaOH solution gives :

A. $C_6H_5CH_2OH$

B. C_6H_5COOH

C. C_6H_5COONa

D. C_6H_5COONa and $C_6H_5CH_2OH$.

Answer: D

Watch Video Solution

66. Acetal is formed by reacting alcohol in the presence of dry HCl with :

A. ether

B. acetone

C. acetaldehyde

D. acetic acid.

Answer: C

Watch Video Solution

67. Benzaldehyde reacts with CH_3NH_2 to give :

A. $C_6H_5NH_2$

B. $C_6H_5CH_2NH_2$

C. $C_6H_5CH = NCH_3$

D. $C_6H_5CONH_2$.

Answer: C

Watch Video Solution

68. In Etard 's reaction toluene is oxidised to benzaldehyde using :

A. H_2O_2

B. Cl_2

C. $KMnO_4$

D. Chromyl chloride.

Answer: D

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69. Reaction between diethyl cadmium and acetyl chloride leads to the formation of :

A. dimethyl ketone

B. ethylmethyl ketone

C. diethyl ketone

D. acetaldehyde.

Answer: B

Watch Video Solution

70. Identify the final product (Z) in the following sequence of reactions :

$$Me_2C = O + HCN \rightarrow X \xrightarrow{H_3O^+} Y \xrightarrow[\text{Heat}]{H_2SO_4} Z$$

A. $(CH_3)_2C(OH)COOH$

B. $CH_2 = C(CH_3)COOH$

C. $HOCH_2CH(CH_3)COOH$

D. $CH_3CH = CHCOOH.$

Answer: B

Watch Video Solution

71. Among the given compounds , the most susceptible to nucleophilic attack at the carbony group is :

A. $MeCOCl$

B. $MeCHO$

C. $MeCOOMe$

D. $MeCOOCOMe$

Answer: B

Watch Video Solution

72. Among the following compounds which will react with acetone to give a product containing $> C = N -$?

A. $C_6H_5NH_2$

B. $(CH_3)_3N$

C. $C_6H_5NHC_6H_5$

D. $C_6H_5NHNH_2$

Answer: D

Watch Video Solution

73. A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives :

A. benzoyl alcohol and sodium formate

B. sodium benzoate and methyl alcohol

C. sodium benzoate and sodium formate

D. benzyl alcohol and methyl alcohol .

Answer: B

Watch Video Solution

74. In the following reaction , product 'P' is :

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

A. RCH_2OH

B. $RCOOH$

C. $RCHO$

D. RCH_3.

Answer: C

Watch Video Solution

75. Reduction of aldehydes and ketones into hydrocarbons using zinc amalgam and conc .HCl is called :

A. Cope reduction

B. Dow reduction

C. Wolff -Kishner reduction

D. Clemmensen reduction.

Answer: D

Watch Video Solution

Multiple Choice Questions Level Ii

1. Which of the following most reactive towards HCN ?

A. CH_3COCH_3

B. CH_3CHO

C. $CH_3COC_2H_5$

D. $HCHO$.

Answer: D

Watch Video Solution

2. Formalin is an aqueous solution of :

A. methyl formate

B. formic acid

C. formyl chloride

D. formaldehyde.

Answer: D

Watch Video Solution

3. Which compound is oxidised to prepare methyl ethyl ketone?

A. 2- Propanol

B. 1- Butanol

C. 2- Butanol

D. t- Butyl alcohol.

Answer: C

Watch Video Solution

4. Which of the following reagents cannot be used to distinguish between pebtanal and 2- pentanone ?

A. Fehling solution

B. I_2 in NaOH

C. Br_2 in CS_2

D. Tollen 's reagent,

Answer: C

Watch Video Solution

5. The Cannizzaro 's reaction is not given by :

A. trimethylacetaldehyde

B. acetaldehyde

C. benzaldehyde

D. formaldehyde.

Answer: B

Watch Video Solution

6. Formaldehyde reacts with ammonia to give

A. hexamethylene tetraamine

B. formamide

C. pyridine

D. formalin.

Answer: A

Watch Video Solution

7. When two molecules of acetaldehyde condense in the presence of a dilute alkali , it forms :

A. acetal

B. trioxan

C. mesitylene

D. aldol.

Answer: D

Watch Video Solution

8. An alkene with molecular formula C_7H_{14} on reductive ozonolysis followed by hydrolysis gives , an aldehyde with molecular formula C_3H_6O and a ketone . The ketone is :

A. 2- Butanone

B. 2- Pentanone

C. 3- Pentanone

D. Propanone.

Answer: A

Watch Video Solution

9. Which of the following will not give haloform reaction ?

A. Acetone

B. 2- Pentanone

C. 3- Pentanone

D. 2- Butanone.

Answer: C

Watch Video Solution

10. In the reaction , $CH_3 - \underset{\underset{CH_3}{|}}{C} = O \xrightarrow[-H_2O]{NH_2NH_2} X \xrightarrow[\text{glycol}]{KOH} Y + N_2$ Y is

A. $\underset{\underset{OH}{|}}{CH_2} - \underset{\underset{OH}{|}}{CH} - \underset{\underset{OH}{|}}{CH_2}$

B. $CH_3 - CH = CH_2$

C. CH_3CH_2COOH

D. $CH_3CH_2CH_3$.

Answer: D

Watch Video Solution

11. A compound X gives cyanohydrin with HCN and the cyanohydrin on hydrolysis yields lactic acid. The compound X is

A. Formaldehyde

B. Ethyl cyanide

C. Ethyl alcohol

D. Acetaldehyde.

Answer: D

Watch Video Solution

12. Aldehydes give silver mirror test with ammoniacal silver nitrate solution due to the formation of :

A. silver acetate

B. silver formate

C. silver

D. silver carbonate.

Answer: C

Watch Video Solution

13. Paraldehyde is a :

A. dimer of acetaldehyde

B. trimer of acetaldehyde

C. hexamer of acetaldehyde

D. equimolar mixture of formaldehyde and acetaldehyde.

Answer: B

Watch Video Solution

14. Benzaldehyde reacts with aniline to give :

A. Benzamide

B. Benzal diazonium chloride

C. Benzal aniline

D. Hydro benzamide .

Answer: C

Watch Video Solution

15. Methyl alcohol and air when passed through a heated tube containing a mixture of iron powder and molybdenum oxide gives :

A. CH_3COOH

B. CH_3CHO

C. $HCHO$

D. CH_3COCH_3.

Answer: C

Watch Video Solution

16. Acetone on reduction with $Zn(Hg)$, HCl gives :

A. Propane

B. Acetaldehyde , carbon dioxide

C. acetic acid

D. Ethyl alcohol.

Answer: A

Watch Video Solution

17. In the reaction , $2CH_3CHO \xrightarrow{dil.NaOH} X \xrightarrow[\text{Heat}]{H^+, -HH_2O} Y$, Y is :

A. Mesityl oxide

B. 2- Butene

C. 2- Butenal

D. 3- Hydroxy butanal.

Answer: C

Watch Video Solution

18. The reaction , $C_6H_5CHO + CH_3CHO \xrightarrow[\text{Heat}]{dil.\,NaOH} C_6H_5CH = CHCHO$ is known as

A. Aldol condensation

B. Cannizzaro 's reaction

C. Clemmensen 's reaction

D. Claisen condensation.

Answer: D

Watch Video Solution

19. The reaction , $C_6H_5CHO + (CH_3CO)_2O \xrightarrow[180^\circ C]{CH_3COONa} X$, x is :

A. C_6H_5COOH

B. $C_6H_5CH_3$

C. $C_6H_5CH = CHCOOH$

D. $C_6H_5COC_6H_5$.

Answer: C

Watch Video Solution

20. Which of the following gives a pink colouration with Schiff s reagent ?

A. CH_3CH_2COOH

B. CH_3COCH_3

C. CH_3CH_2CHO

D. CH_3CH_2OH.

Answer: C

Watch Video Solution

21. Formaldehyde reacts with ammonia to give white precipitate of hexamethylene tetramine It is also called :

A. Urotropine

B. Formose

C. trioxane

D. Formalin.

Answer: A

Watch Video Solution

22. When propyne is treated with aqueous H_2SO_4 in presence of $HgSO_4$, the major product is

A. n- Propyl hydrogen sulphate

B. Propanal

C. Acetone

D. Propanol.

Answer: C

Watch Video Solution

23. The Grignard reagent rqquired to prepare 2- butanol from acetaldehyde is ,

A. CH_3MgBr

B. $CH_3\overset{CH_3}{\underset{|}{C}}HMgBr$

C. CH_3CH_2MgBr

D. $CH_3MgCl.$

Answer: C

Watch Video Solution

24. Acetone is mixed with bleaching powder to give :

A. Phosgene

B. Chloroform

C. Acetic Acid

D. Propanoic acid .

Answer: B

Watch Video Solution

25. In the Wolff Kishner reduction aldehydes and ketones are first converted to :

A. hydrazones

B. acids

C. alcohols

D. alkenes.

Answer: A

Watch Video Solution

26. HCHO and CH_3CHO can be distinguished by :

A. Ammonia

B. Tollen 's reagent

C. Schiff 's reagent

D. Fehling solution.

Answer: A

Watch Video Solution

27. Oximes are formed by the reaction of aldehydes and ketones with :

A. NH_3

B. NH_2NH_2

C. NH_2OH

D. $NH_2CONHNH_2$.

Answer: C

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28. Treatment of propionaldehyde with dil , NaOH solution gives :

A. $CH_3CH_2COOCH_2CH_2CH_3$

B. $CH_3CH_2CHOHCH(CH_3)CHO$

C. $CH_3CH_2CHOHCH_2CH_2CHO$

D. $CH_3CH_2COCH_2CH_2CHO$.

Answer: B

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29. Which of the following can be used to distinguish between ethanal and propanal ?

A. Schiff s reagent

B. Fehling solution

C. I_2 and $NaOH$

D. Ammoniacal $AgNO_3$.

Answer: C

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30. 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. CH_3CHO

B. CH_3CH_2OH

C. $(CH_3)_2CHOH$

D. $CH_3CH_2CH_2OH.$

Answer: C

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31. The alkene which on ozonolysis gives acetone is :

A. $CH_3CH = Ch - CH_3$

B. $CH_2 = CH_2$

C. $(CH_3)_2C = C(CH_3)_2$

D. $CH_3 - \underset{\underset{CH_3}{|}}{CH}(CH) = CH_2$

Answer: C

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32. Methyl ketones are usually characterised by

A. Tollen 's reagent

B. Iodoform test

C. Schiff's test

D. Benedict 's reagent.

Answer: B

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33. Acetone on treating with conc H_2SO_4 gives

A. Mesitylene

B. Benzene

C. Phorone

D. Mesityl oxide.

Answer: A

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34. m-chlorobenzaldehyde on reaction with conc. KOH at room temperature gives

A. potassium m - chlorobenzoate and m- hydroxy benzaldehyde.

B. m- hydroxybenzaldehyde and m- chlorobenzyl alcohol.

C. m- chlorobenzyl alcohol and m - hydroxy benzyl alcohol .

D. potassium m - chlorobenzoate and m- chlorobenzyl alcohol .

Answer: D

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35. The compound which can form intramolecular hydrogen bond is :

A. m- Hydroxybenzaldehyde

B. Salicylaldehyde

C. Benzaldehyde

D. p- Hydroxybenzaldehyde .

Answer: B

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36. Which of the following is hypnotic ?

A. Acetaldehyde

B. Paraldehyde

C. Metaldehyde

D. Formaldehyde.

Answer: B

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37. Formaldehyde polymerises to give

A. Trioxane

B. Para formaldehyde

C. Formalin

D. CO and H_2.

Answer: B

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38. In the reaction , $HC \equiv CH \xrightarrow[H_2SO_4]{HgSO_4} X \xrightarrow{LiAlH_4} Y \xrightarrow{P/Br_2} Z$Z is :

A. Ethylene bromide

B. Ethyl bromide

C. Bromo benzene

D. Ethylidinebromide.

Answer: B

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39. In the reaction , $C_6H_5CH = CHCHO \xrightarrow{X} C_6H_5CH = CHCH_2OH$,X is :

A. $K_2Cr_2O_7 / H^+$

B. Ni / H_2

C. $NaBH_4$

D. 'both [a] and [b]'

Answer: C

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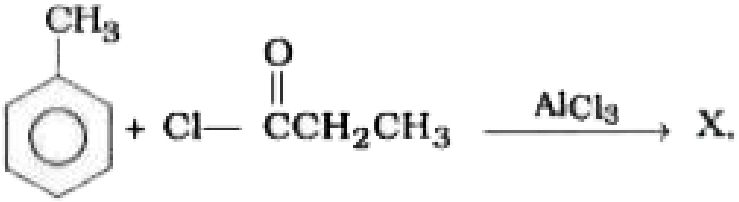
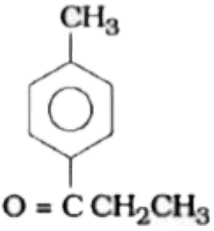
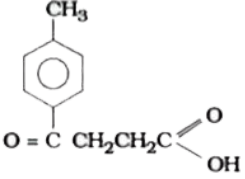
40. In the reaction ,

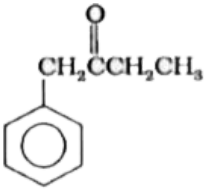


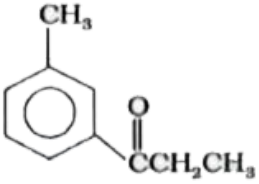
the product

X is :

A. 

B. 

C. 

D. 

Answer: A

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41. In the reaction ,

2- Butanone $\xrightarrow{CN^-, H^+} A \xrightarrow{H_2SO_4} B \xrightarrow{\text{Heat}} C$, the product C is :

A. $CH_3CH = \underset{\underset{CH_3}{|}}{C} - COOH$

B. $CH_3CH_2\underset{\underset{CH_3}{|}}{C}COOH$

C. $CH_3CH_2-\underset{OH}{\overset{CH_3}{\underset{|}{\overset{|}{C}}}}-COOH$

D. $CH_3CH=CHCH_3$

Answer: A

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42. In the reaction, $[A]+CH_3CHO \xrightarrow[\text{Heat}]{dil\,,NaOH} CH_2=CHCHO \xrightarrow{Ag(NH_3)_2} [B]$ A and B are :

A. $CH_3COCH_3, CH_2=CHCOOH$

B. $HCHO, CH_2=CHCOOH$

C. $HCHO.\, CH_3COOH+CO_2$

D. $CH_3CHO, CH_2=CHCOOH.$

Answer: B

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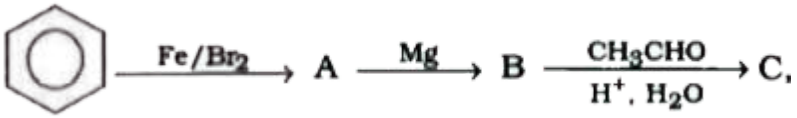
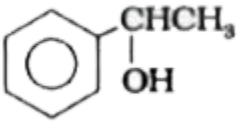
43. In the reaction ,

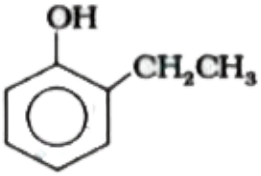


the product C is :

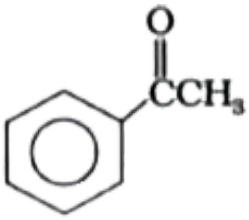
A.



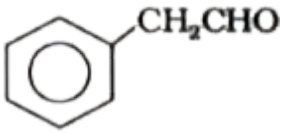
B.



C.



D.



Answer: A

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44. The reaction, $C_6H_5CHO + (CH_3CO)_2O \xrightarrow[C_6H_5Ch=CHCOOH]{CH_3COONa}$ is known as :

A. Perkin reaction

B. Claisen reaction

C. Gattermann reaction

D. Aldol condensation.

Answer: A

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45. In the reaction , $CH_3CHO + HCN \rightarrow CH_3CH(OH)CN$ a chiral centre is produced . The product would be :

A. meso compound

B. recemic mixture

C. leavorotatory

D. dextrorotatory.

Answer: B

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46. In the reaction , $CH_3CHO \xrightarrow{dilNaOH} A \xrightarrow[\text{Heat}]{H^+} B \xrightarrow[NH_4OH]{AgNO_3} C$ The product C is :

A. Butanoic acid

B. 2- Methyl propanoic acid

C. Malonic acid

D. Crotonic acid.

Answer: D

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47. An organic compound X on treatment with acidified $K_2Cr_2O_7$ gives compound Y which reacts with I_2 and sodium carbonate to form tri-iodomethane . The compound X is :

A. CH_3OH

B. CH_3COCH_3

C. CH_3CHO

D. $CH_3\underset{\underset{OH}{|}}{CH}CH_3$

Answer: D

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48. The product C in the following sequence of chemical reaction is :

$CH_3COOH \xrightarrow{CaCO_3} A \xrightarrow{\text{Heat}} B \xrightarrow{NH_2OH} C,$

A. acetaldehyde oxime

B. formaldehyde oxime

C. methyl hydroxide

D. acetoxime.

Answer: D

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49. Which of the following can give cannizzaro's reaction with a base

A. CH_3CHO

B. CH_3COCH_3

C. $CH_3 - \overset{CH_3}{\underset{CH_3}{C}} - CHO$

D. $(CH_3)_2CHCHO.$

Answer: C

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50. Which reagent can be used to convert benzoyl chloride to benzaldehyde ?

A. $B_2H_6(THE), H_2O_2, OH^-$

B. $H_2, Pd, BaSO_4$ (sulphur)

C. P C C

D. Hg^{2+}, H_3O^+

Answer: D

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51. The prducts of the reaction of HCHO and Ph CHO in the presence of concentrated base PhCHO in the presence of concentrated base are :

A. $CH_3OH + PhCOO^-$

B. $HCOO^- + PhCH_2OH$

C. $PhCOOCH_3$

D. $HOOCCH_2Ph.$

Answer: B

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52. In the Cannizzaro 's reaction given below, $2PhCHO \xrightarrow{OH^-} PhCH_2OH + PhCOO^-$ the slowest step is :

A. the attack of OH^- at the carbonyl group

B. the transfer of hydride to the carbonyl group

C. the abstraction of proton from carboxylic acid

D. the deprotonation of $PhCH_2OH$.

Answer: B

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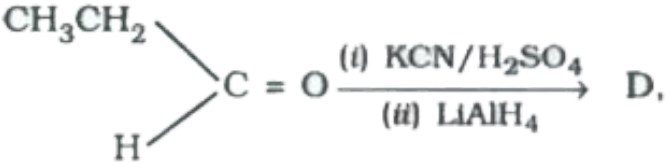
53. In the reaction ,



D is :

A. $CH_3CH_2CH_2\underset{\underset{OH}{|}}{C}HNH_2$

B. $CH_3CH_2\underset{\underset{OH}{|}}{C}HCH_2NH_2$

C. $CH_3\underset{\underset{OH}{|}}{C}HCH_2CH_2NH_2$

D. $CH_3CH\underset{OH}{\overset{OH}{|}}{C}-NH_2$

Answer: B

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54. An organic compound , C_3H_6O does not react with 2, -4 - dinitrophenyl hydrazine and also does not react with metaliic sodium . It may be :

A. CH_3CH_2CHO

B. CH_3COCH_3

C. $CH_2=CHCH_2OH$

D. $CH_2=CH-OCH_3$.

Answer: D

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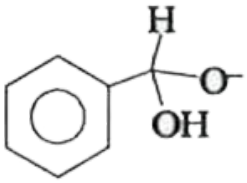
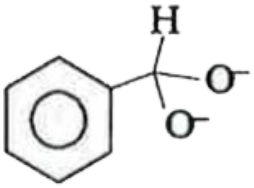
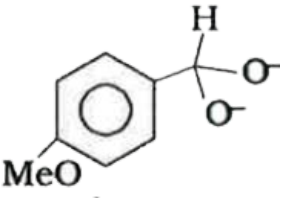
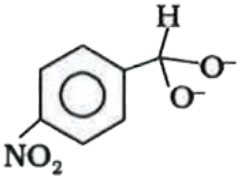
55. In a Cannizzaro's reaction , the intermediate which is best hydride donor is :

A. 

B. 

C. 

D. 

Answer: D

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56. A new carbon - carbon bond formation is possible in :

A. Cannizzaro 's reaction

B. Friedel Crafts reaction

C. Clemmensen reduction.

D. Reimer Tiemann reaction.

Answer: B,D

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57. Which of the following will not undergo aldol condensation ?

A. acetaldehyde

B. propanaldehyde

C. benzaldehyde

D. trideutero acetaldehyde.

Answer: C

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58. Acetophenone on reaction with p - nitrobenzoic acid gives :

A. Benzophenone

B. Phenyl acetate

C. Methyl benzoate

D. Phenyl propionate.

Answer: C

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59. Which of the following has most acidic hydrogen ?

A. 3- hexanone

B. 2,4- hexanedione

C. 2,5 - hexanedione

D. 2, 3- hexanedione.

Answer: B

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60. Identify the correct oreder of boiling points of the following compounds :

$\underset{(1)}{CH_3CH_2CH_2CH_2OH}$ $\underset{(2)}{CH_3CH_2CH_2CHO}$

$\underset{(3)}{CH_3CH_2CH_2COOH}$

A. $1 > 2 > 3$

B. $3 > 1 > 2$

C. $1 > 3 > 2$

D. $3 > 2 > 1$.

Answer: B

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61. Which of the following is correct ?

A. reduction of an aldehyde gives secondary alcohol

B. reaction of vegetable oil with H_2SO_4 gives glycerine

C. alcoholic iodine with NaOH gives iodoform

D. sucrose on reaction with NaCl gives invert sugar.

Answer: C

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62. The incorrect IUPAC name is :

A. $\underset{2-\text{Methyl-3 butanone}}{\overset{\overset{O}{||}}{CH_3C}\overset{\overset{CH_3}{|}}{CH}-CH_3}$

B. $\underset{2,3-\text{Dimethyl pentane}}{CH_3-\overset{\overset{CH_3}{|}}{CH}-\overset{\overset{CH_2}{|}}{CH}-CH_3}$

C. $\underset{4-\text{Methyl-2-pentyne}}{CH_3-C\equiv CCH(CH_3)_2}$

D. $\underset{2-\text{Bromo-3-chlorobutane}}{CH_3-\overset{\overset{Cl}{|}}{CH}-\overset{\overset{Br}{|}}{CH}-CH_3}$

Answer: A

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63. In the reaction ,

$CH_3CHO + HCN \rightarrow CH_3CH(OH)CN$

$\xrightarrow{H^+ / H_2O} CH_3CH(OH)COOH$ an asymmetric centtre is generated .

The acid obtained would be :

A. d- isomer

B. l- isomer

C. $50\,\%\,d + 50\,\%\,l - \text{isomer}$

D. $20\,\%\,d + 80\,\%\,l - \text{isomer}.$

Answer: C

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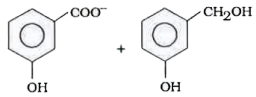
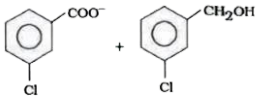
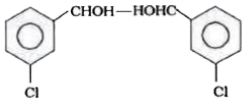
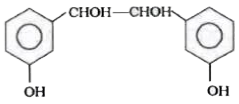
64. When m - chlorobenzaldehyde is treated with KOH solution, the product (s) is/are :

A. 

B. 

C. 

D. 

Answer: A

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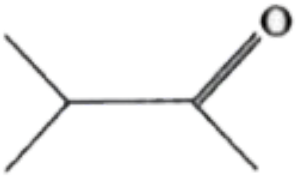
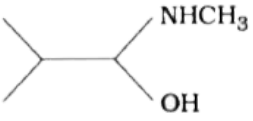
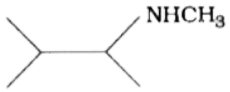
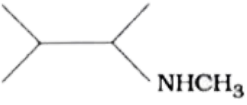
65. The major organic product formed from the followinf reaction ,

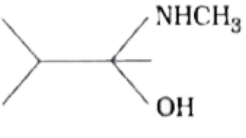


$\xrightarrow[(ii)\ LiAlH_4, H_2O]{(i)\ CH_3NH_2}$ is :

A. 

B. 

C. 

D. 

Answer: B

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66. Nucleophilic addition reaction will be most favoured in :

A. $(CH_3)_2C = O$

B. CH_3CH_2CHO

C. CH_3CHO

D. $CH_3CH_2CH_2\overset{O}{\overset{||}{C}}CH_3$.

Answer: C

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67. Which one of the following on treatment with $50\,\%$ aqueous sodium hydroxide yields the corresponding alcohol and acid ?

A. C_6H_5CHO

B. $CH_2CH_2CH_2CHO$

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

D. $C_6H_5CH_2CHO.$

Answer: A

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68. For making distinction between 2- pentanone and 3 - pentanone the reagent to be employed is

A. $K_2Cr_2O_7 / H_2SO_4$

B. ZnHg/HCl

C. SeO_2

D. iodine/NaOH.

Answer: D

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69. The rate determining step in Cannizzaro's reaction is

A. Attacks of OH^- on C=O group

B. transfer of H^- to C = O group

C. abstraction of H^+ from - COOH group

D. loss of H^+ from - COOH group.

Answer: B

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70. C_3H_6O did not give a silver mirror test with Tollen 's reagent but gave an oxime with hydroxylamine . It can give positive

A. Iodoform test

B. Fehling's test

C. Schiff's test

D. Carbylamine test.

Answer: A

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71. The compound which is not formed during the dry distillation of a mixture of calcium formate and calcium acetate is

A. propanal

B. propanone

C. ethanal

D. methanal.

Answer: A

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72. An organic compound X is oxidised by using acidified $K_2Cr_2O_7$. The product obtained reacts with phenyl hydrazine but does not answer silver mirror test. The possible structure of X is

A. CH_3COCH_3

B. $(CH_3)_2CHOH$

C. CH_3CHO

D. $CH_3CH_2OH.$

Answer: A

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73. The compound which forms acetaldehyde when heated with dilute NaOH is

A. 1,1,1- trichloroethane

B. 1- chloroethan

C. 1,2 - dichloroethane

D. 1,1 - dichloroethane

Answer: D

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74. A compound 'A' having molecular formula $C_5H_{12}O$, on oxidation gives a Compound 'B' with moleculer 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

A. $CH_3CH_2CH_2CH_2CH_2OH$

B. $CH_3CH_2CH_2\underset{\underset{OH}{|}}{CH}-CH_3$

C. $CH_3CH_2\underset{\underset{OH}{|}}{CH}CH_2CH_3$

D. $CH_3CH_2\underset{\underset{CH_3}{|}}{CH} - CH_2OH$

Answer: C

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

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

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

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

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

Answer: B

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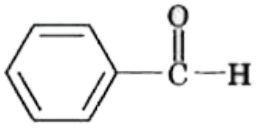
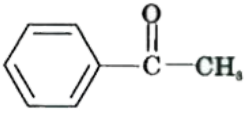
76. Which of the following compounds is most reactive towards nucleophilic addition reactions ?

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

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

C. 

D. 

Answer: A

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77. 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: C

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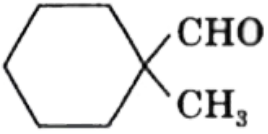
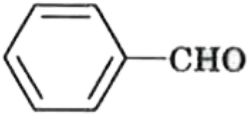
78. Cannizaro's reaction is not given by _____.

A. 



B.

C. HCHO

D. CH_3CHO

Answer: D

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

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

A. Prop -1- en -2- o1 metamerism

B. Prop -1- en -1-o1 , tautomerism

C. Prop - 2 - en -2-o1 , geometrical isomerism

D. Prop -1- en-2- o1 , tautomerism

Answer: D

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

A. Butan - 1 - o1

B. Butan -2- o1

C. Both of these

D. None of these.

Answer: B

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81. The reagent used in Clemmensen reduction is

A. Zinc amalgam +HCl

B. Sodium amalgam + HCl

C. Zinc amalgam + nitric acid

D. Sodium amalgam $+HNO_3$

Answer: A

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82. Aldol condensation between the compounds followed by dehydration gives methyl vinyl ketone.

A. $HCHO$ and CH_3COCH_3

B. $HCHO$ and CH_3CHO

C. Two molecules of CH_3CHO

D. Two molecules of CH_3COCH_3

Answer: A

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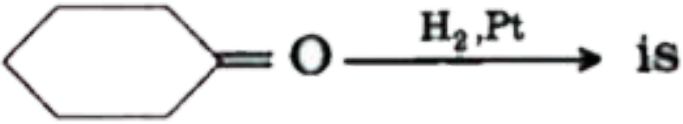
83. The product of the following reaction



A.


B.


C.


D.


Answer: C

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84. A carbonyl compound reacts with hydrogen cyanide to from cyano hydrin which on hydrolysis forms a racemic mixture of α - hydroxy acid . The carbonyl compounds is

A. acetone

B. diethyl ketone

C. fromaldehyde

D. Acetaldehyde.

Answer: D

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85. Which one of the following on treatment with 50% aqueous sodium hydroxide yields the corresponding alcohol and acid ?

A. C_6H_5CHO

B. $CH_2CH_2CH_2CHO$

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

D. $C_6H_5CH_2CHO.$

Answer: A

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Multiple Choice Questions Level Iii

1. One mole of a symmetrical alkene on ozonolysis gives two moles of an aldehyde having molecular mass of 44u . The alkene is :

A. 2- butene

B. ethene

C. propene

D. 1- butene

Answer: A

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2. Silver mirror test is given by which one of the following compounds ?

A. Formaldehyde

B. benzophenone

C. acetaldehyde

D. Acetone

Answer: (A,C)

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

A. 2,2,2 -Trichloropropanol

B. Chloroform

C. 2,2,2- Trichloroethanol.

D. Trichloromethanol

Answer: C

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4. Ozonolysis of an organic compound gives formaldehyde as one of the products. This confirms the presence of :

A. two ethylenic double bonds

B. a vinyl group

C. an isopropyl group

D. an acetylenic triple bond

Answer: B

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5. Iodoform can be prepared from all, except

A. isopropyl alcohol

B. 3- methyl -2- butanone

C. isobutyl alcohol

D. ethyl methyl ketone

Answer: C

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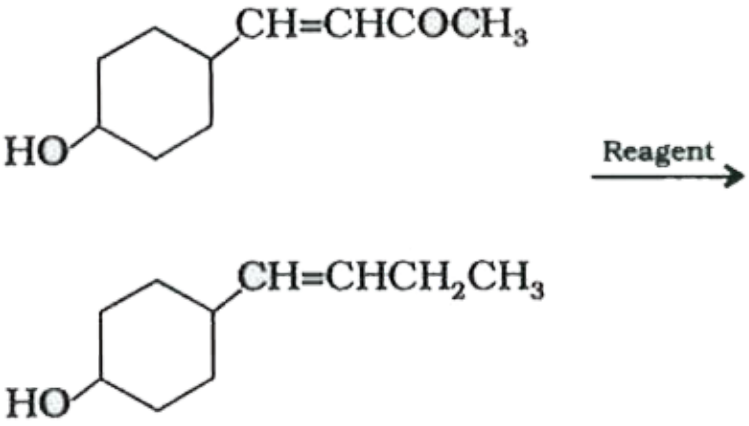
6. In the given transformation , which of the following is the most appropriate reagent ?



A. $Na, Liq.\ NH_3.$

B. $NH_2NH_2, \overset{\Theta}{O}H$

C. $Zn - Hg/HCl$

D. $NaBH(4).$

Answer: B

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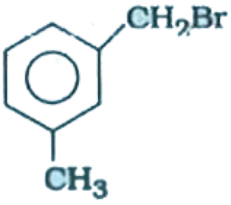
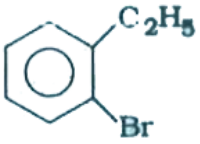
7. Compound (A), C_8H_9Br, gives a white precipitate when warmed with alcoholic $AgNO_3$. Oxidation of (A) gives an acid (B), $C_8H_6O_4$.(B) easily forms anhydride on heating Identify the compound (A).

A.

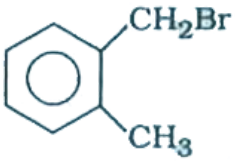


B.



C.

D.



Answer: D

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8. An organic compound A upon reacting with NH_3 gives B . On heating , B gives C.C in presence of KOH reacts with Br_2 to give $CH_3CH_2NH_2$.A is :

A. CH_3COOH

B. $CH_3CH_2CH_2COOH$

C. $CH_3 - \underset{\underset{CH_3}{|}}{CH} - COOH$

D. $CH_3CH_2COOH.$

Answer: D

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9. The most suitable reagent for the conversion of $RCH_2 - OH$ to $R - CHO$ is

A. $KMnO_4$

B. $K_2Cr_2O_7$

C. CrO_3

D. PC C (pyridinium chlorochromate)

Answer: D

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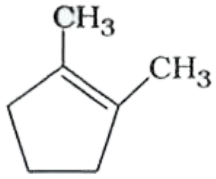
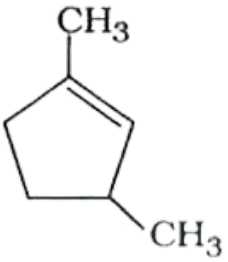
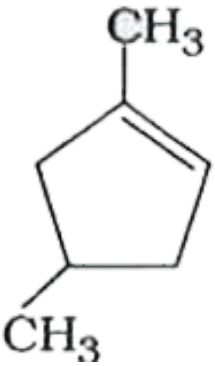
10. Which compound would give 5 - keto -2 - methyl hexanal upon ozonolysis ?

A. 

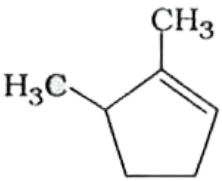
B.



C.



D.



Answer: B

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