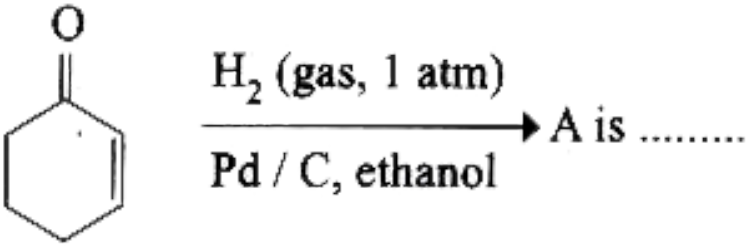
CHEMISTRY

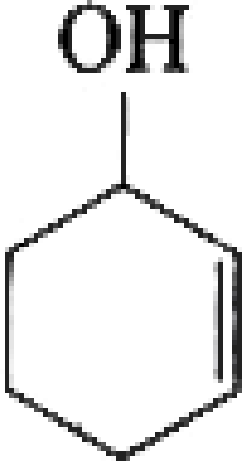
BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

CARBONYL COMPOUNDS

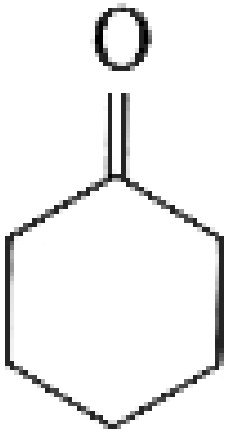
Textbook Evaluation Choose The Correct Answer

1. The correct structure of the product 'A' formed in the reaction





A.



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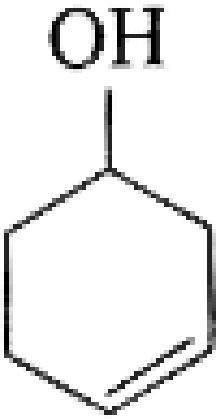

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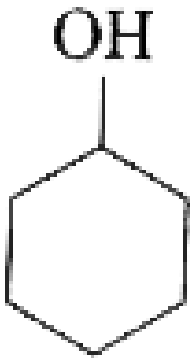
D. 

Answer: B

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2. The formation of cyanohydrin from acetone is an example of

A. nucleophilic substitution

B. electrophilic substitution

C. electrophilic

D. nucleophilic addition

Answer: D

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3. Reaction of acetone with one of the following reagents involves nucleophilic addition followed by elimination of water . The reagent is

A. grignard reagent

B. Sn/CHl

C. hydrazine in presence of slightly acidic solution

D. hydrocyanic acid

Answer: C

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4. In the following reaction ,

$HC \equiv CH \xrightarrow[HgSO_4]{H_2SO_4} X$ product 'X' will not give

A. tollen's test

B. victor meyer test

C. iodoform test

D. fehling solution test

Answer: B

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5. In the following reaction ,

$$CH_2 = CH \xrightarrow[(ii)\, Zn/H_2O]{(i)\, O_3} X \xrightarrow{NH_3} Y$$ 'y' is

A. formaldehyde

B. diacetoneammonia

C. hexamethylenetertraamine

D. oxime

Answer: C

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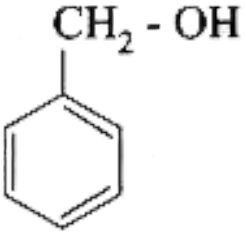
6. Predict the product Z in the following series of reactions

Ethanoic acid $\xrightarrow{PCl_5} X \xrightarrow[\text{anhydrous } AlCl_3]{C_6H_6} Y \xrightarrow[(ii)\, H_3O^+]{(i)\, CH_3MgBr} Z$

A. $(CH_3)_2C(OH)C_6H_5$

B. $CH_3CH(OH)C_6H_5$

C. $CH_3CH(OH)CH_2 - CH_3$

D. 

Answer: A

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7. Assertion : 2,2-dimethyl propanoic acid does not give HVZ reaction

Reason : 2,2- dimethyl propanoic acid does not have $-\alpha$ hydrogen atom

A. If both assertion and reason are true and reason in the correct explanation assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. Assertion is true but reason is false

D. Both assertion and reason are false

Answer: A

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8. Which of the following represents the correct order of acidity in the given compounds

A.

$$FCH_2COOH > CH_3COOH > BrCH_2COOH > Cl_2CH_2COOH$$

B.

$$FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$$

C.

$$CH_3COOH > ClCH_2COOH > FCH_2COOH > Br - CH_2COOH$$

D.

$$ClCH_2COOH > CH_3COOH > BrCH_2COOH > ICH_2COOH$$

Answer: B

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9. Benzoic acid $A \xrightarrow[(ii)\ \Delta]{(i)\ NH_3} \xrightarrow{NaOBr} B \xrightarrow{NaNO_2/HCl} C$ 'C' is

A. anilinium chloride

B. O-nitro aniline

C. benzene diazonium chloride

D. m-nitro benzoic acid

Answer: C

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10. Ethanoic acid $\xrightarrow{P / Br_2}$ 2-bromoethanoic acid . This reaction is called

A. finkelstein reaction

B. haloform reaction

C. hell-volhard-zelinsky reaction

D. none of these

Answer: A

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11. $CH_3Br \xrightarrow{KCN} (A) \xrightarrow{H_3O^+} (B) \xrightarrow{PCl_5} (C)$ product (C) is

A. acetylchloride

B. chloro acetic acid

C. α - chlorocyano ethanoic acid

D. none of these

Answer: A

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12. Which one of the following reduces tollens reagent

A. formic acid

B. acetic acid

C. benzophenone

D. none of these

Answer: A

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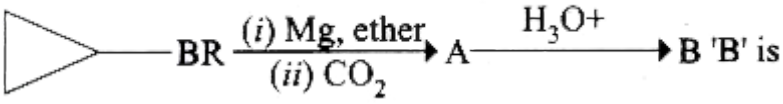
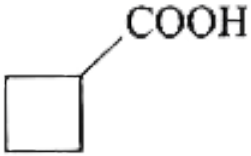
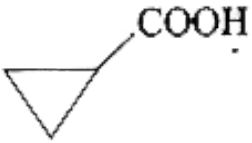
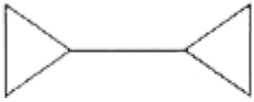
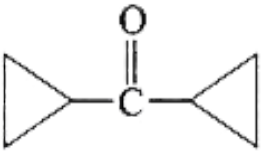
13. 

A. 

B. 

C. 

D. 

Answer: B

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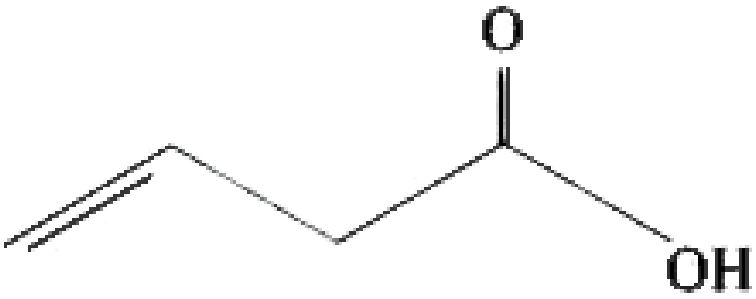
14. The IUPAC name of



A. but-3-enoicacid

B. but-1-ene-4-oicacid

C. but-2-ene-1-oic acid

D. but-3-ene-1-oicacid

Answer: A

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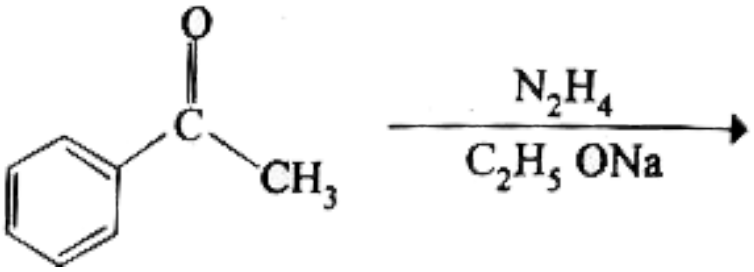
15. Identify the product formed in the reaction



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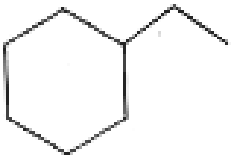

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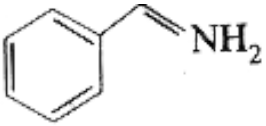

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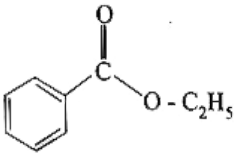

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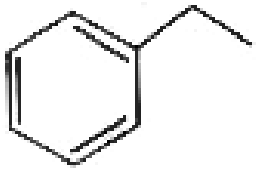

Answer: D

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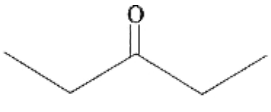
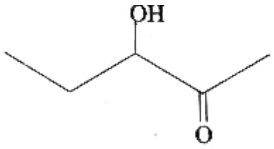
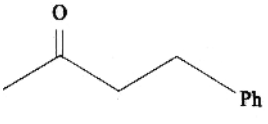
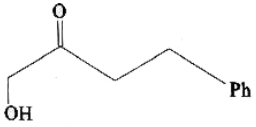
16. In which case chiral carbon is not generated by reaction with HCN

A. 

B. 

C. 

D. 

Answer: A

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17. Assertion : p-N,N - dimethyl aminobenzaldehyde undergo benzoic condensation

Reason : The aldehydic (-CHO) group is meta directing

A. If both assertion and reason are true and reason in the correct explanation assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. Assertion is true but reason is false

D. Both assertion and reason are false

Answer: B

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18. Which one of the following reaction is an example of disproportionation reaction

A. Aldol condensation

B. cannizaro reaction

C. Benzoin condensation

D. none of these

Answer: B

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19. Which one of the following undergoes reaction with 50% sodium hydroxide solution to गिव the corresponding alcohol and acid

A. Phenylmethanal

B. ethanal

C. ethanol

D. methanol

Answer: A

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

A. Tollens reagent

B. Fehling's solution

C. 2,4 – dinitrophenyl hydrazine

D. semicarbazide

Answer: B

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21. Phenyl methanal is reacted with concentrated NaOH to give two products X and Y. X reacts with metallic sodium to liberate hydrogen X and Y are

A. sodiumbenzoate and phenol

B. Sodium benzoate and phenyl methanol

C. phenyl methanol and sodium benzoate

D. none of these

Answer: C

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22. In which of the following reactions new carbon – carbon bond is not formed?

A. Aldol condensation

B. Friedel craft reaction

C. Kolbe's reaction

D. Wolf kishner reduction

Answer: D

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23. An alkene "A" on reaction with O_3 and $Zn - H_2O$ gives propanone and ethanol in equimolar ratio. Addition of HCl to alkene "A" gives "B" as the major product. The structure of product "B" is

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

B. $H_3C - CH_2 - \overset{\overset{CH_2Cl}{|}}{C} H - CH_3$

C. $H_3C - CH_2 - \overset{\overset{CH_3}{|}}{\underset{\underset{Cl}{|}}{C}} - CH_3$

D. $H_3C - CH - \overset{\overset{CH_3}{|}}{\underset{\underset{Cl}{|}}{C}} H$

Answer: C

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

A. more extensive association of carboxylic acid via van der Waals force of attraction

B. formation of carboxylate ion

C. formation of intramolecular H-bonding

D. formation of intermolecular H - bonding

Answer: D

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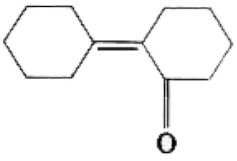
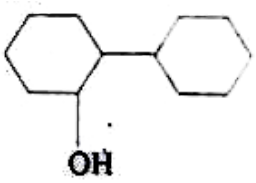
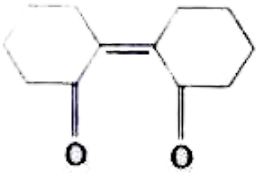
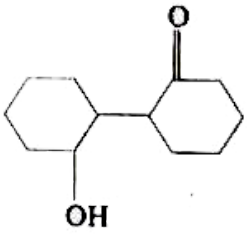
25. Of the following, which is the product formed when cyclohexanone undergoes aldol condensation followed by heating?

A. 

B. 

C. 

D. 

Answer: A

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Textbook Evaluation Answer The Following Questions

1. How is propanoic acid is prepared starting from

(a) an alcohol (b) an alkylhalide (c) an alkene

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2. A Compound (A) with molecular formula C,H,N on acid hydrolysis gives(B) which reacts with thionylchloride to give compound(C). Benzene reacts with compound (C) in presence of anhydrous $AICI_3$ to give compound(C). Compound (C) on reduction with gives (D). Identify (A), (B), (C) and D. Write the equations.

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3. Identify X and Y

$$CH_3COCH_2CH_2COOC_2H_5 \xrightarrow{CH_3MgBr} X \xrightarrow{H_3O^+} Y$$

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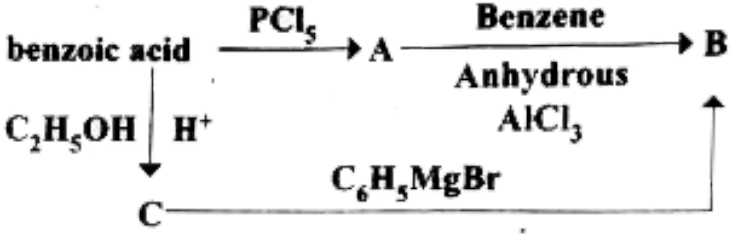
4. Identify A,B and C



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5. A hydrocarbon A(molecular formula C_8H_{10}) on ozonolysis gives $B(C_4H_6O_2)$ only. Compound $C(C_3H_5Br)$ on treatment with magnesium in dry ether gives (D) which on with CO_2 followed by acidification gives(B). Identify A, B, C and D.

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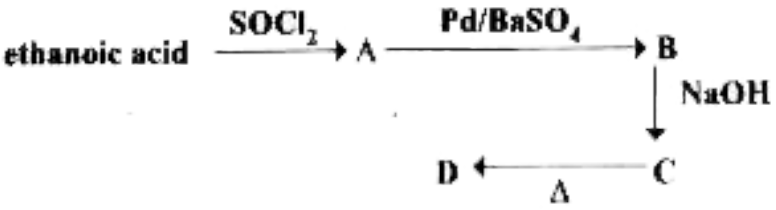
6. Identify A,B,C and D



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7. An alkene (A) on ozonolysis gives propanone and aldehyde (B). When (B) is oxidised (C) is obtained. (C) is treated with Bry/P gives (D) which on

hydrolysis gives (E). When propanone is treated with HCN followed by hydrolysis gives (F). Identify A, B, C, D and E and F.

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8. How will you convert benzaldehyde into the following compounds?

(i) benzophenone , (ii) benzoic acid (iii)2 - hydroxyphenylaceticacid.

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9. What is the action of HCN on (i) propanone (ii) 2,4-dichlorobenzaldehyde.

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10. A carbonyl compound A having molecular formula $C_5H_{10}O$ forms crystalline precipitate with sodium bisulphate and gives positive iodoform test. A does not reduce Fehling solution. Identify A.

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11. Write the structure of the major product of the aldol condensation of benzaldehyde with acetone.

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12. How are the following conversions effected

(a) propanal into butanone (b) Hex-3-yne into hexan-3-one. (c) phenylmethanal into benzoic acid (d) phenylmethanal into benzoin

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13. Complete the following reaction

$$CH_3 - CH_2 - CH_2 - \underset{\underset{O}{||}}{C} - CH_3 \xrightarrow[H^+]{HO - CH_2 - CH_2 - OH}$$

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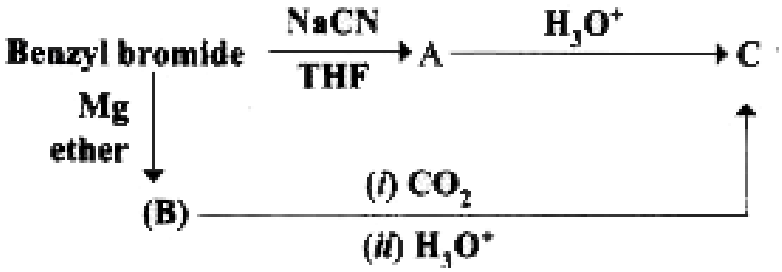
14. Identify A,B and C



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15. When ketones are undergo oxidation, the C-C bond is cleaved. When a strong oxidising agent is used to oxidise 2,5 - dimethyl hexan - 3 - one mention the products with their names.

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16. How will you convert following conversion?

(i) Acetic acid into acetic anhydride (ii) Methyl acetate into ethyl acetate (iii) Methyl acetate into acetamide (iv) Acetyl chloride into acetophenone (v) Sodium acetate into ethane (vi) Ethanal into lactic acid (vii) Toluene

into benzoic acid (viii) Benzaldehyde into malachite green (ix) Benzaldehyde into Cinnamic acid (x) Ethyne into acetaldehyde

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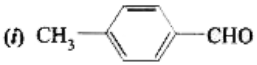
Evaluate Yourself

1. Write the IUPAC name for the following compound

(i) 

(ii) $(CH_3)_2C = CHCOCH_3$

(iii) 

(iv) $(CH_3)_2C(OH)CH_2CHO$

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2. Write all possible structural isomers and position isomers for the ketone represented by the molecular formula $C_5H_{10}O$.

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3. What happens when the following alkenes are subjected to reductive ozonolysis

(i) propene (ii) 1 – Butene (iii) Isobutylene

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4. What happens when n-propyl benzene is oxidised using $H^+ / KMnO_4$?

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5. How will you prepare benzoic acid using Grignard reagent.

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6. Why acid anhydride are preferred to acyl chloride for carrying out acylation reactions ?

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Additional Questions Choose The Best Answer

1. Which one of the following aldehyde is derived from vitamin B, function as a co-enzyme?

A. Pyridoxal

B. Formaldehyde

C. Ethanal

D. Propanal

Answer: A

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2. Which one of the following is used in the manufacture of Bakelite?

A. Methanal

B. Ethanal

C. Phenyl methanal

D. Butanal

Answer: A

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3. Which is used as a drug to reduce fever?

A. Diethyl ether

B. Acetone

C. Acetophenone

D. Paracetamol

Answer: D

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4. The IUPAC name of Acrolein is .....

A. Prop - 2 - enal

B. Propanal

C. Ethenal

D. 1 - butanal

Answer: A

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5. The IUPAC name of crotanaldehyde $CH_3-CH=CH-CHO$ is ...

A. Prop - 2 - enal

B. But - 2 - enal

C. Ethenal

D. Phenyl methanal

Answer: B

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6. The IUPAC name of is $HO-CH_2-\underset{\underset{OH}{|}}{C}H-CHO$ .....

A. Glyceraldehyde

B. Acrolein

C. 2,3 – dihydroxy propanal

D. Butanal

Answer: C

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7. Which one of the following is called Mesityl oxide?

A. 

B. $C_6H_5 - \underset{\underset{O}{||}}{C} - CH_3$

C. $(CH_3)_2C = CHCOCH_3$

D. $C_6H_5 - \underset{\underset{O}{||}}{C} - C_6H_5$

Answer: C

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8. Which one of the following is called 3 – oxopentanal?

A. $C_6H_5 - \underset{\underset{O}{||}}{C} - C_6H_5$

B. $CH_3CH_2 - \underset{\underset{O}{||}}{C} - CH_2 - CHO$

C. $(CH_3)_2C = CHCOCH_3$

D. $C_6H_5CH = CH - CHO$

Answer: B

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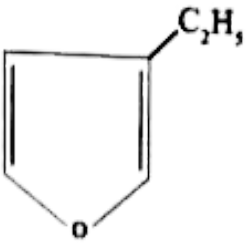
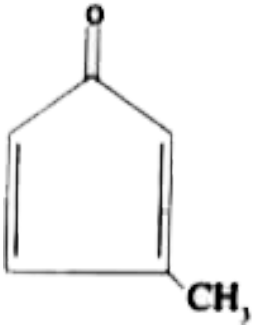
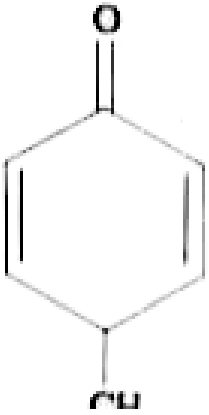
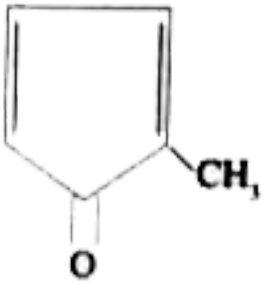
9. Which one of the following is names as 3-methyl cyclopentanone ?

A. 

B. 

C. 

D. 

Answer:

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10. Which one of the following is the hybridised state of C atoms in carbonyl carbon?

A. sp

B. sp^3d

C. sp^3

D. sp^2

Answer: D

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11. Which of the following reagent is used to get aldehyde from alcohol by oxidation method?

A. $Na_2Cr_2O_7$

B. $KMnO_4$

C. PCC

D. $LiAlH_4$

Answer: C

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12. The product formed when but - 2 - ene is on ozonolysis is .....

A. Propanone

B. Methanal

C. Ethanal

D. Butanal

Answer: C

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13. Which one of the following should be ozonolysed to get a mixture of ethanal and propanone?

A. Propene

B. But-2-ene

C. Ethylene

D. 2-methyl-but-2-ene

Answer: D

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14. The products formed when propene is ozonolysed are .....

A. $HCHO + CH_3CHO$

B. CH_3CHO

C. $HCOOH + CH_3COOH$

D. CH_3COCH_3

Answer: A

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15. Identify the products formed when But-1-ene undergoes reductive ozonolysis?

A. $HCHO + CH_3CHO$

B. $HCHO + CH_3CH_2CHO$

C. $CH_3COCH_3 + CH_3CHO$

D. $HCHO + CH_3COCH_3$

Answer: B

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16. Which one of the following should be subjected to reductive ozonolysis to get only formal dehyde?

A. $CH \equiv CH$

B. $CH_3 - CH = CH_2$

C. $CH_2 = CH_2$

D. $CH_3 - CH_3$

Answer: C

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17. What are the products formed when Isobutylene is subjected to ozonolysis?

A. $HCHO + CH_3CHO$

B. $CH_3COCH_3 + HCHO$

C. $CH_3CHO + CH_3COCH_3$

D. $CH_3COCH_3 + CH_3CH_2CHO$

Answer: B

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18. Which one of the following is formed when acetylene is hydrolysed in the presence of $HgSO_4$ and H_2SO_4 ?

A. Ethanal

B. Ethylene

C. Ethane

D. Ethanol

Answer: D

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19. Hydrolysis of prop-1- yne in the presence of $HgSO_4$ and H_2SO_4 gives .....

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

B. CH_3CHO

C. CH_3CH_2CHO

D. $HCHO$

Answer: A

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20. 

A+B. In this reaction A and B are .....

A. $CaCO_3 + H_2$

B. $CO_2 + H_2O + Ca$

C. $HCHO + CaCO_3$

D. $CO + H_2O + Ca(OH)_2$

Answer: C

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21. Calcium acetate on dry distillation gives .....

A. Acetic acid

B. Propanone

C. Ethanol

D. Propanal

Answer: B

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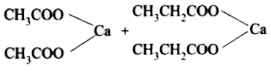
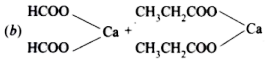
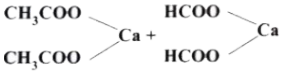
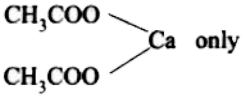
22. Which of the following calcium salts are required to get ethanal by dry distillation process?

A. 

B. 

C. 

D. 

Answer: C

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23. The conversion of acetyl chloride to acetaldehyde by the action of $Pd/BaSO_4$ is called

A. Perkin's reaction

B. Stephen's reaction

C. Clemmenoon reduction

D. Rosenmund reduction

Answer: D

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24. Which of the following cannot be prepared by Rosenmund reduction method?

A. Acetaldehyde

B. Formaldehyde

C. Ketone

D. Both b & c

Answer: D

View Text Solution

25. In Rosenmunds reduction, the action of $BaSO_4$ is.....

A. Promoter

B. Catalyst poison

C. Positive catalyst

D. Negative catalyst

Answer: B

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26. Which one of the following is an intermediate product in Stephen's reaction?

A. Amines

B. Amides

C. Imines

D. Amino acid

Answer: C

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27. Which one of the following is used as selective reducing agent in the conversion of cyanide to aldehyde?

A. Raney Ni

B. $LiAlH_4$

C. $SnCl_2 / HCl$

D. DIBAL-H

Answer: D

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28. Identify the product formed when benzaldehyde reacts with chromyl chloride?

A. Benzoic acid

B. Benzaldehyde

C. Phenyl methanol

D. Phenol

Answer: B

View Text Solution

29. The conversion reaction of Benzene to Benzaldehyde is known as ....

A. Rosenmund reduction

B. Stephen reduction

C. Gattermann koch reaction

D. Friedel-crafts reaction

Answer: C

View Text Solution

30. Which one of the following is used to convert acetyl chloride to acetone?

A. $CdCl_2$

B. CrO_2Cl_2

C. Cu_2Cl_2

D. $NaCl$

Answer: A

View Text Solution

31. Which one of the following is the best method to prepare alkyl aryl ketone and diaryl Ketones?

A. Stephen reaction

B. Knoevengal reaction

C. Clemmenson reduction

D. Friedel crafts reaction

Answer: D

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32. The product formed when Benzoyl chloride reacts with benzene is.....

A. Benzyl benzoate

B. Benzophenone

C. Benzyl chloride

D. Benzyl alcohol

Answer: B

View Text Solution

33. Which one of the following is used as catalyst in Friedel Crafts reaction?

A. Anhydrous $ZnCl_2$

B. Anhydrous $CuCl_2$

C. Anhydrous $AICI_3$

D. Androus $CaCl_2$

Answer: C

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34. During nucleophilic addition reaction, the hybridisation of carbon changes from .....

A. sp^2 to sp^3

B. sp^3 to sp^2

C. sp to sp^3

D. dsp^2 to sp^3

Answer: A

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35. Which one of the following is formed as a product when ethanal is treated with 2 equivalent of methanol?

A. 1,1 - dimethoxy methane

B. 1,2 - dimethoxy ethane

C. 1,1 - dimethoxy ethane

D. 1,1 - diethoxy ethane

Answer: C

View Text Solution

36. Which aldehyde does not give aldimine with etheral ammonia solution?

A. CH_3OH

B. CH_3CH_2CHO

C. $HCHO$

D. $CH_3 - \overset{CH_3}{\underset{|}{C}}\ H - CHO$

Answer: C

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37. Identify the product formed when acetaldehyde reacts with ammonia?

A. $CH_3 - CH = NH$

B. $CH_3 - CH_2 - NH_2$

C. $CH_3 - \underset{NH_2}{\underset{|}{C}}\ H - CH_3$

D. $CH_3 - NH_2$

Answer: A

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38. Which one of the following is formed when methanal reacts with ammonia?

A. Tetramethylene hexamine

B. Hexamethylene tetramine

C. Formaldehyde ammonia

D. Aldimine

Answer: B

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39. Which one of the following is used as an urinary antiseptic?

A. Urotropine

B. Urea formaldehyde

C. Formalin

D. Aldimin

Answer: A

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40. Which one of the reactions gives an explosive RDX?

A. Nitration of phenol

B. Nitration of glycol

C. Nitration of urotropine

D. Nitration of glycerol

Answer: C

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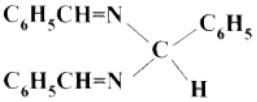
41. Which one of the following is called hydrobenzamide?

A. $C_6H_5NH - NH_2$

B. 

Hydrobenzamide

C. $(CH_2)_6N_4$

D. $CH_3 - CH = NH$

Answer: B

View Text Solution

42. Which one of the following is formed when benzaldehyde reacts with ammonia?

A. Benzalamine

B. Benzylamine

C. Hydrobenzamide

D. Benzamide

Answer: C

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43. Which rule governes the oxidation of unsymmetrical ketone?

A. Markovnikoff 's rule

B. Popoff's rule

C. Antimarkovnikoff's rule

D. Hund's rule

Answer: B

View Text Solution

44. What are the products formed when 2-butanone is oxidised by conc-HNO_3 ?

A. $CH_3 - CH_2 - CH_2 - COOH$

B. $HCOOH + CH_3 - CH_2 - COOH$

C. $CH_3 - \underset{\underset{CH_3}{|}}{C} - CH_2COOH$

D. $CH_3CH_2COOH + CH_3COOH$

Answer: D

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45. $CH_3 - \underset{\underset{O}{||}}{C} - CH_3 \xrightarrow{conc.HNO_3} A + B$. In this reaction A and B are ....

A. $CH_3COOH + HCOOH$

B. $CH_3COOH + CO_2$

C. $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_3 + H_2O$

D. $HCOOH + CO_2$

Answer: A

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46. Name the product formed Acetaldehyde reacts with Zinc amalgam and conc.HCI?

A. Propane

B. Ethane

C. Ethene

D. Ethanal

Answer: B

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47. The reagent used in the conversion of $-\underset{\underset{O}{||}}{C}-$ group into – CH_2 – group is ....

A. $Zn + Hg/HCl$

B. $NH_2 - NH_2 + C_2H_5ONa$

C. $Mg/Hg/H_2O$

D. either (a) or (b)

Answer: D

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48. The product formed when Acetone is subjected to Clemmenson reduction is .....

A. Acetic acid

B. Propanoic acid

C. Propane

D. Propanal

Answer: C

View Text Solution

49. Which one of the following is formed when acetone is treated with magnesium amalgam and water?

A. Pinacol

B. Acetyl acetone

C. Aceto acetic ester

D. 1,2 – dimethyl butane 1,2 - diol

Answer: A

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50. Which one of the following does not undergo halo form reaction?

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

B. $CH_3 - CH_2OH$

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

D. $CH_3 - CH_2 - \underset{\underset{O}{||}}{C} - CH_2 - CH_3$

Answer: D

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51. Which one of the following undergoes halo form reaction?

A. HCHO

B. C_6H_5CHO

C. CH_3CHO

D. $CH_3 - CH_2 - CH_2OH$

Answer: C

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52. Which one of the following is formed when acetaldehyde is warmed with dilute NaOH?

A. But – 2 - enal

B. Butan - 1 - al

C. 3 – hydroxy butanal

D. 2 - hydroxybutanoic acid

Answer: C

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53. The IUPAC name of Acetaldol is.....

A. 3 – hydroxy butanal

B. Aldol

C. 2 - hydroxy butanal

D. Butanal

Answer: A

View Text Solution

54. Which one of the following is formed when benzaldehyde reacts with acetaldehyde ?

A. Cinnamic acid

B. Cinnamaldehyde

C. Benzylidene acetone

D. 3 – hydroxy propanal

Answer: B

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55. The crossed aldol condensation product of the reaction between Formaldehyde and Acetaldehyde is .....

A. 3 – hydroxy propanol

B. 3 – hydroxy propanal

C. 2 - hydroxy butanal

D. 3 – hydroxy butanal

Answer: B

View Text Solution

56. The reaction of benzaldehyde with 50% NaOH is called .....

A. Benzoin condensation

B. Claisen-schmidt reaction

C. Perkin's reaction

D. Cannizaro reaction

Answer: D

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57. The reaction of phenyl methanal and ethanal in the presence of dilute NaOH is known as

A. Cannizaro reaction

B. Aldol condensation

C. Claisen-schmidt condensation

D. Perkin's reaction

Answer: C

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58. What is the second step in Cannizaro reaction mechanism?

A. Attack of OH on carbonyl carbon

B. Acid base reaction

C. Protonation of carbonyl oxygen

D. Hydride ion transfer

Answer: D

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59. The first step take place in Cannizaro reaction mechanism is .....

A. Attack of OH on carbonyl carbon

B. Protonation of carbonyl oxygen

C. Acid base reaction

D. Hydride ion transfer

Answer: A

View Text Solution

60. Which one of the following is formed when benzaldehyde reacts with alcoholic KOH?

A. Benzyl alcohol

B. Potassium benzoate

C. Benzoin

D. Benzoic acid

Answer: C

View Text Solution

61. What is the name of the reaction of alcoholic KOH with Benzaldehyde?

A. Cannizaro reaction

B. Perkin's reaction

C. Benzoin condensation

D. Aldol condensation

Answer: C

View Text Solution

62. Which one of the following is formed when benzaldehyde reacts with acetic anhydride?

A. Cinnamaldehyde + Acetaldehyde

B. Cinnamic acid + Acetic acid

C. Benzyl alcohol + Benzoic acid

D. Benzal aniline + Acetic acid

Answer: B

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63. . What is the name of the reaction between Benzaldehyde and acetic anhydride?

A. Perkin's reaction

B. Knoerenagal reaction

C. Cannizaro reaction

D. Kolbe's reaction

Answer: A

View Text Solution

64. What are the reagents required to prepare Benzal aniline (or) Schiff's base?

A. Benzyl amine + Ammonia

B. Benzal amine + Ammonia

C. Benzaldehyde + Aniline

D. Phenol + Aniline

Answer: C

View Text Solution

65. Which one of the following is the formula of Schiff's base?

A. $C_6H_5 - NHNH_2$

B. $C_6H_5CH = N - C_6H_5$

C. $C_6H_5NH - NHC_6H_5$

D. $C_6H_5CH_2NH_2$

Answer: B

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66. Which one of the following is used as a catalyst in Knoevenagal reaction?

A. Pyrimidine

B. pyridine

C. PCC

D. $CdCl_2$

Answer: B

View Text Solution

67. Which one is formed when Benzaldehyde reacts with Malonic acid in the presence of Pyridine?

A. Cinnamaldehyde

B. Benzoin

C. Hydrobenzamide

D. Cinnamic acid

Answer: D

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68. Name the product formed when Benzaldehyde reacts with N,N-dimethyl aniline in the presence of conc.H_2SO_4 ?

A. Cinnamic acid

B. Schiff's base

C. Malachite green dye

D. p - hydroxy azodye

Answer: C

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69. Identify the product formed when benzaldehyde reacts with chlorine in the presence of conc.$FeCl_2$?

A. m - chlorobenzaldehyde

B. o - chlorobenzaldehyde

C. p - chlorobenzaldehyde

D. Benzoyl chloride

Answer: A

View Text Solution

70. Identify the product formed when benzaldehyde reacts with chlorine in the absence of catalyst?

A. p - chlorobenzaldehyde

B. o - chlorobenzaldehyde

C. Benzoyl chloride

D. m - chlorobenzaldehyde

Answer: C

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71. Which one of the following is used to test ketones?

A. Iodoform test

B. Tollen's reagent test

C. Fehling's solution test

D. Benedict's solution test

Answer: A

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72. Which one of the following is not used to identify aldehydes?

A. Benedict's solution test

B. Fehling's solution test

C. Dye test

D. Tollen's reagent test

Answer: C

View Text Solution

73. What is the colour change take place when Fehling's solution is added to an aldehyde?

A. Red to blue

B. Blue to red

C. Red to green

D. Green to blue

Answer: B

View Text Solution

74. Which one of the following is used for preserving biological specimens?

A. Urotropine

B. Formalin

C. Schiff's base

D. Benzoin

Answer: B

View Text Solution

75. Which one of the following is formed when phenol is heated with formalin?

A. Bakelite

B. Polyurethane

C. PVC

D. Polyester

Answer: A

View Text Solution

76. RDX is otherwise named as .....

A. Cyclonite

B. Cyclohexane

C. 1,4 – dione

D. Cyclohexanol

Answer: A

View Text Solution

77. Which one of the following is used as a hypnotic?

A. Acetaldehyde

B. Formalin

C. Paraldehyde

D. Formaldehyde

Answer: C

View Text Solution

78. Which one of the following is used in silvering of mirrors?

A. Paraldehyde

B. Benzaldehyde

C. Acetone

D. Acetaldehyde

Answer: D

View Text Solution

79. Which one of the following is used in the manufacture of smokeless powder (Cordite) ?

A. Acetone

B. Acetaldehyde

C. Acetic acid

D. Formaldehyde

Answer: A

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80. Which one of the following is used as nail polish remover?

A. CH_3CHO

B. $HCHO$

C. CH_3COCH_3

D. $C_6H_5COCH_3$

Answer: C

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81. Which is used in the manufacture of thermosoftening plastic perspex?

A. Acetaldehyde

B. Formaldehyde

C. Acetone

D. Acetophenone

Answer: C

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82. Which of the following is called hyphone?

A. $CH_3 - \underset{\underset{O}{||}}{C} - C_6H_5$

B. $C_6H_5 - \underset{\underset{O}{||}}{C} - C_6H_5$

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

D. CH_3CHO

Answer: A

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83. Which of the following is used in the preparation of benzhydrol drop?

A. Benzaldehyde

B. Benzophenone

C. Acetophenone

D. Benzoin

Answer: C

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84. Consider the following statements:

(i) Terminal olefins gives Formaldehyde as one of the product (ii) Oxidation of alcohols using pcc yield carboxylic acids (iii) Catalytic dehydrogenation of alcohols give either aldehyde or ketone.

Which of the above statement is/are not correct?

A. (ii) only

B. (i) & (iii)

C. (ii) & (iii)

D. (ii) only

Answer: A

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85. Consider the following statements:

(i) In Rosenmund reduction Barium sulphate act as a catalyst poison palladium catalyst, so that aldehyde cannot be further reduced to alcohol (ii) Side chain oxidation of toluene using strong oxidising agent gives benzoic acid. (iii) Friedle crafts reaction is the best method used to prepare aliphatic ketones.

Which of the above statement is/are correct?

A. (iii) only

B. (i) & (ii)

C. (i) & (iii)

D. (ii) & (iii)

Answer: B

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86. Consider the following statements:

(i) Formaldehyde is a gas at room temperature and acetaldehyde is a volatile liquid. (ii) The oxidation of symmetrical ketones is governed by Popott's rule. (iii) Aliphatic aldehyde react with primary amines in the presence of base gives Schiff's base.

Which of the above statement is/are not correct?

A. (i) only

B. (ii) only

C. (ii) & (iii)

D. (i) & (ii)

Answer: C

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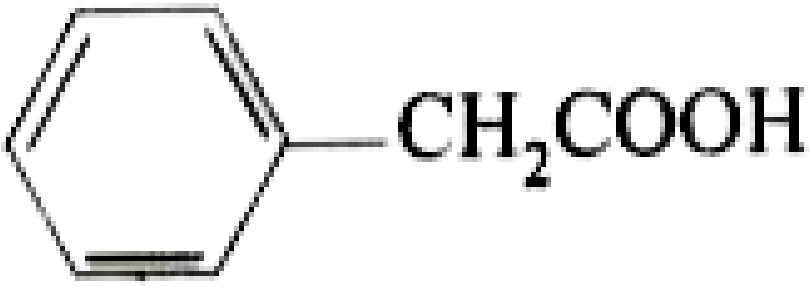
87. The IUPAC name of is



is .....

A. Benzene carboxylic acid

B. Benzoic acid

C. 2 - phenyl ethanoic acid

D. 2 - phenyl acetic acid

Answer: C

View Text Solution

88. The formula of malonic acid is .....

A. $\begin{matrix} COOH \\ | \\ COOH \end{matrix}$

$COOH$
|

B. CH_2
|
$COOH$
CH_2COOH

C. |
CH_2COOH

D. $HOOC-(CH_2)_3-COOH$

Answer: B

View Text Solution

89. The IUPAC name of $HOOC-(CH_2)_4-COOH$ is .....

A. Adipic acid

B. Butane dioic acid

C. Hexane dioic acid

D. Glutaric acid

Answer: C

View Text Solution

90. Which one of the following is the formula of Succinic acid?

A. $HOOC - CH_2 - COOH$

B. $HOOC - (CH_2)_2 - COOH$

C. $HOOC - (CH_2)_4 - COOH$

D. $HOOC - (CH_2)_3 - COOH$

Answer: B

View Text Solution

91. Consider the following statements:

(i) In – COOH group, the centre carbon atom and both the oxygen atoms are in sp^3 hybridisation.

(ii) RCOOH can be represented as a resonance hybrid of two canonical structures. (iii) Carboxylic carbon is less electrophilic than carbonyl

carbon because of the reasonance structure.

Which of the above statement is/are correct?

A. (i) only

B. (iii) only

C. (ii) & (iii)

D. (ii) only

Answer: C

View Text Solution

92. Which one of the following reacts with methyl magnesium iodide followed by acid hydrolysis yield acetic acid?

A. solid CO_2

B. HCHO

C. CH_3CHO

D. CH_3CN

Answer: A

View Text Solution

93. Which one of the following acid cannot be prepared from grignard reagent by the action of dry ice?

A. CH_3COOH

B. C_6H_5COOH

C. $CH_3 - CH_2COOH$

D. $HCOOH$

Answer: D

View Text Solution

94. Which one of the following is formed as a product when Benzoic anhydride is hydrolysed?

A. Benzoin

B. Benzoic acid

C. Benzyl alcohol

D. Benzaldehyde

Answer: B

View Text Solution

95. Consider the following statements:

(i) Carboxylic acids have higher boiling point than aldehyde and ketone due to the association of carboxylic acid. (ii) Vinegar is 60 to 80% solution of acetic acid in water (iii) Higher carboxylic acids are insoluble in water due to increased hydrophobic interaction of hydrocarbon part.

Which of the above statement is/are not correct?

A. (iii) only

B. (ii) only

C. (i) only

D. (i) & (iii)

Answer: B

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96. Which one of the following is formed when ethanoic acid is treated with HI and Red phosphorous?

A. Ethane

B. Ethene

C. Ethyne

D. Methane

Answer: A

View Text Solution

97. What will be the product formed when sodium acetate is treated with sodalime?

A. C_2H_6

B. CH_4

C. CH_3COOH

D. $(CH_3CO)_2O$

Answer: B

View Text Solution

98. The reaction of electrolysis of sodium acetate to form ethane is known as ...

A. Kolbe's electrolytic decarboxylation

B. Perkin's reaction

C. Clemmenson reaction

D. Cannizaro reaction

Answer: A

View Text Solution

99. Sodium formate solution on electrolysis gives ..... at anode.

A. Methane + CO_2

B. Ethane + CO_2

C. $H_2 + CO_2$

D. Formic acid

Answer: C

View Text Solution

100. Which one of the following is formed when acetic acid is heated with phosphorous pentoxide?

A. CH_3COCH_3

B. CH_3CONH_2

C. CH_4

D. $(CH_3CO)_2O$

Answer: D

View Text Solution

101. The reaction of acetic acid with Cl_2 and red phosphorous is named as .....

A. Kolbe's reaction

B. Reimer-Tiemann reaction

C. Hell-volhard-zelinsky reaction

D. Knoevenagal reaction

Answer: C

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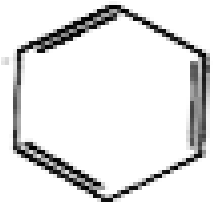
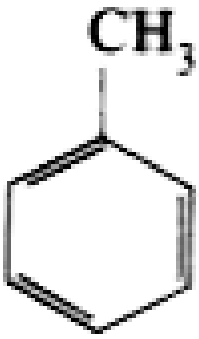
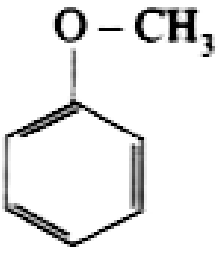
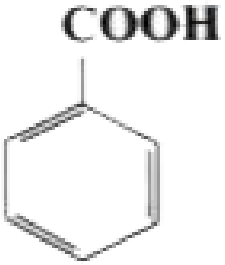
102. Which one of the following does not undergo friedel crafts reaction?

A. 

B. 

C. 

D. 

Answer: D

View Text Solution

103. Which one of the following can act as a reducing agent?

A. C_6H_5COOH

B. $HCOOH$

C. CH_3COOH

D. $CH_3 - CH_2COOH$

Answer: B

View Text Solution

104. Consider the following statements:

(i) Carboxylic acids turn red litmus blue. (ii) Carboxylic acids give brisk efferrescence with $NaHCO_3$ (iii) Carboxylic acid is warmed with alcohol and conc. H_2SO_4 gives fruity odour ester.

Which of the above statement is/are not correct?

A. (i) only

B. (ii) only

C. (iii) only

D. (i) & (iii)

Answer: A

View Text Solution

105. Which is one the correct order of strength of carboxylic acid?

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

B. $CH_3 - \overset{O}{\overset{||}{C}} - OH < H - \overset{O}{\overset{||}{C}} - OH > CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - OH$

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

D. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - OH > H - \overset{C}{\overset{||}{-}} OH > CH_3 - \overset{O}{\overset{||}{C}} - OH$

Answer: A

View Text Solution

106. The correct increasing order acid strength of carboxylic acid is .....

A.

$F - CH_2 - COOH > I - CH_2 - COOH > Cl - CH_2 - COOH >$

B.

$Br - CH_2 - COOH > F - CH_2COOH > I - CH_2COOH > Cl -$

C.

$F - CH_2 - COOH > Cl - CH_2COOH > Br - CH_2COOH > I -$

D. $Br - CH_2 - COOH > Cl - CH_2 - COOH$

Answer: C

View Text Solution

107. The increasing order of acid strength is ...

A. $CH_3COOH > Cl_2CHCOOH > \mathrm{CCl_3\mathbb{C}}OOH > ClCH_2COOH$

B. $Cl_3\mathrm{CC}OOH > Cl_2CHCOOH > ClCH_2COOH > CH_3COOH$

C. $CH_3COOH < Cl_2CHCOOH < \mathrm{CCl_3CC}OOH < ClCH_2COOH$

D. $Cl_2CH - COOH < \mathrm{CCl_3}COOH < ClCH_2COOH < CH_3COOH$

Answer: B

View Text Solution

108. The relative acidities of various organic compounds are .....

A. $RCOOH > ArOH > H_2O > ROH > RC \equiv CH$

B. $RC \equiv CH > ArOH > ROH > H_2O > RCOOH$

C. $ROH > R \equiv CH > ArOH > RCOOH > H_2O$

D. $H_2O > ROH > RCOOH > ArOH > RC \equiv CH$

Answer: A

View Text Solution

109. The correct order of the basicity of the leaving group is

A. $\bar{O}R > RC\bar{O}O > H_2\bar{N}: > :Cl^-$

B. $Cl^- > H_2\bar{N}: > \bar{O}R > RC\bar{O}O$

C. $H_2\bar{N}: > :O\bar{R} > RC\bar{O}O: > Cl^-$

D. $RCOO^- : > H_2\bar{N} > :Cl^- > :OR^-$

Answer: C

View Text Solution

110. The conversion of Ethyl acetate to propyl acetate by the action of propyl alcohol is named as

A. Esterification

B. Transesterfication

C. Acid hydrolysis of ester

D. Alkaline hydrolysis of ester

Answer: B

View Text Solution

111. Ethyl acetate undergoes self condensation in the presence of strong base to give .....

A. Ethyl aceto acetate + Ethanol

B. Ethyl aceto acetate + Acetic acid

C. Ethyl aceto propionate + propanol

D. Ethyl ethanoate + Ethanoic acid

Answer: A

View Text Solution

112. Methyl cyanide on acid hydrolysis gives .....

A. Acetyl chloride

B. Acetic acid

C. Acetamide

D. Acetic anhydride

Answer: C

View Text Solution

113. Which one of the following is the product formed when acetamide is treated with P_2O_5 ?

A. Acetonitrile

B. Methylamine

C. Ethyl cyanide

D. Methanamine

Answer: A

View Text Solution

114. Identify the product formed when acetamide reacts with $LiAIH_4$?

A. Methyl amine

B. Aceto nitrite

C. Ethyl amine

D. Ethylcyanide

Answer: C

View Text Solution

115. Which one of the following is used as a medicine in the treatment of gout?

A. CH_3COOH

B. C_6H_5COOH

C. CH_3CONH_2

D. $HCOOH$

Answer: D

View Text Solution

116. Which one of the following is used as a coagulating agent for rubber latex?

A. Ethanoyl chloride

B. Butanoic acid

C. Methanoic acid

D. Benzoic acid

Answer: C

View Text Solution

117. Which one of the following is used as food preservative?

A. Sodium formate

B. Sodium acetate

C. Sodium benzoate

D. Acetamide

Answer: C

View Text Solution

118. Which one of the following is used in detection and estimation of – OH and $-NH_2$ group in organic compounds?

A. Acetic anhydride

B. Acetyl chloride

C. Acetamide

D. Ethyl acetate

Answer: B

View Text Solution

119. Which one of the following is used in the preparation of medicine like aspirin and phenacetin?

A. Acetyl chloride

B. Acetic acid

C. Acetamide

D. Acetic anhydride

Answer: D

View Text Solution

120. Which one of the following is used in the preparation of Artificial fruit essences?

A. Ethanoic acid

B. Acetamide

C. Ethyl acetate

D. Acetic anhydride

Answer: C

View Text Solution

121. Acetone and acetaldehyde are differentiated by ...

A. $NaOH + I^2$

B. $Ag(NH_3)_2$ + (Tollens's reagent)

C. I^2

D. $NaOH + NH_3$

Answer: B

View Text Solution

122. The most suitable reagent for the conversion of is $R - CH_2OH \rightarrow RCHO$ .....

A. $KMnO_4$

B. $K_2Cr_2O_7$

C. CrO_3

D. Pcc

Answer: D

View Text Solution

123. Which of the following will not give iodoform test?

A. Isopropyl alcohol

B. Ethanol

C. Ethanal

D. Benzyl alcohol

Answer: D

View Text Solution

124. Products of the following reaction .....

$$CH_3C \equiv CCH_2CH_3 \xrightarrow[(ii)\,HOH]{(i)\,O_3} ?$$

A. $CH_3CHO + CH_3CH_2CHO$

B. $CH_3COOH + CH_3CH_2CHO$

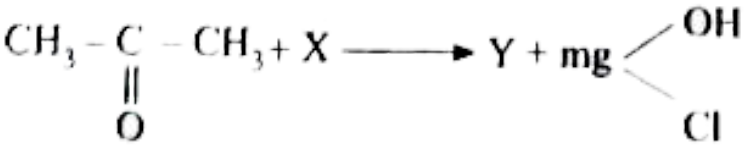
C. $CH_3COOH + HOOCCH_2CH_3$

D. $CH_3COOH + CO_2$

Answer: B

View Text Solution

125. Identify the reagents X and Y are .....



A. $X = MgCl_2 \quad Y = CH_3CH = CH_2$

B. $X = CH_3MgCl \quad Y = C_6H_5COCH_3$

C. $X = CH_3MgCl \quad Y = (CH_3)_3C - OH$

D. $X = C_6H_5MgCl \quad Y = (CH_3)_3C - OH$

Answer: C

View Text Solution

126. Reduction of >C = O to $-CH_2$ can be carried out with

A. Ni

B. Na/C_2H_5OH

C. $NH_2 - NH_2 + C_2H_5ONa$

D. $LiAlH_4$

Answer: C

View Text Solution

127. Which of the following is incorrect?

A. $FeCl_3$ is used in the detection of phenols

B. Fehlings solution is used in the detection of aldehyde

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

D. $NaHSO_3$ is used in the detection of carbonyl compounds

Answer: C

View Text Solution

128. Which of the following products is formed when Benzaldehyde is treated with CH_3MgBr and the addition product so obtained is subjected to acid hydrolysis?

A. Secondary alcohol

B. Primary alcohol

C. Phenol

D. Tertiary alcohol

Answer: A

View Text Solution

129. The reagent used to distinguish formaldehyde and acetaldehyde is .....

A. Tollen's reagent

B. Fehling's solution

C. Schiff's reagent

D. Caustic soda solution

Answer: D

View Text Solution

130. Which of the following will not give halo form test?

A. Ethanal

B. Ethanol

C. Propan-2-one

D. Pentan–3–one

Answer: D

View Text Solution

131. Which of the following does not turn schiff's reagent to pink?

A. Formaldehyde

B. Benzaldehyde

C. Acetone

D. Acetaldehyde

Answer: C

View Text Solution

132. Which will not give acetamide on reaction with ammonia?

A. Acetic acid

B. Acetyl chloride

C. Acetic anhydride

D. methyl formate

Answer: D

View Text Solution

133. The addition of HCN to carbonyl compounds is an example of ..... reaction.

A. Nucleophilic substitution

B. Electrophilic addition

C. Nucleophilic addition

D. Electrophilic substitution

Answer: C

View Text Solution

134. Cinnamic acid is formed when C_6H_5CHO condenses with $(CH_3CO_2)_2O$ in the presence of .....

A. Conc. H_2SO_4

B. CH_3COONa

C. Na metal

D. Anhydrous $ZnCl_2$

Answer: B

View Text Solution

135. The molecular formula of Urotropine is .....

A. $(CH_2)_6N_4$

B. $(CH_2)_4N_6$

C. $(CH_2)_2N_2$

D. $(CH_2)_6N_6$

Answer: A

View Text Solution

136. Bakelite is a thermosetting plastic produced by .....

A. $HCHO + C_6H_5CH_2OH$

B. $HCHO + C_6H_5OH$

C. $CH_3CHO + C_6H_5OH$

D. $HCHO + CH_3COCH_3$

Answer: B

View Text Solution

137. Aldehydes and ketones are reduced to hydrocarbon by the action of ....

A. $LiAlH_4$

B. $H_2/Pd + BaSO_4$

C. $Na + Hg/HCl$

D. $NH_2 - NH_2/C_2H_5ONa$

Answer: D

View Text Solution

138. What is the name of the reaction when benzaldehyde changes into Benzyl alcohol?

A. Friedel-crafts reaction

B. Kolbe's reaction

C. Cannizaro reaction

D. Wurtz reaction

Answer: C

View Text Solution

139. Aldehyde turns pink with

A. Benedict solution

B. Schiff 's base

C. Fehling solution

D. Tollen's reagent

Answer: B

View Text Solution

140. Which of the following would undergo aldol condensation?

A. CCl_3CHO

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

C. $HCHO$

D. CH_3CHO

Answer: D

View Text Solution

141. Which one of the following undergoes reaction with 50% NaOH solution to give the corresponding alcohol and acid?

A. Butanal

B. Phenyl methanal

C. Phenol

D. Ethanal

Answer: B

View Text Solution

142. Hexa methylene tetramine is used as .....

A. analgesic

B. antipyretic

C. Urinary antiseptic

D. all of these

Answer: C

View Text Solution

143. The compound which gives acetone on ozonolysis is .....

A. $CH_3 - CH = CH - CH_3$

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

C. $C_6H_5CH = CH_2$

D. $CH_3 - CH = CH_2$

Answer: B

View Text Solution

144. Predict the product X in the sequence of the reaction $HC \equiv CH \xrightarrow[H_2SO_4]{HgSO_4} A \xrightarrow[NaOH]{40\%} X$

A. CH_3COONa

B. CH_3CHO

C. CH_3COOH

D. $CH_3 - \underset{OH}{\underset{|}{C}}H - CH_2CHO$

Answer: D

View Text Solution

145. From which of the following, tertiary butyl alcohol is obtained by the action of methyl magnesium iodide?

A. HCHO

B. CH_3COCH_3

C. CH_3CHO

D. CO_2

Answer: B

View Text Solution

146. Identify the product "C" in the sequence of the reaction.

$$CH_3CN \xrightarrow{Na/C_2H_5OH} A \xrightarrow{HNO_2} B \xrightarrow[443K]{conc.H_2SO_4} C$$

A. $CH_3CH_2NH_2$

B. CH_3CH_2OH

C. $CH_2 = CH_2$

D. CH_3CHO

Answer: C

View Text Solution

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

A. Ethylene oxide

B. HCHO

C. CH_3CHO

D. $\begin{array}{l} CH_2OH \\ | \\ CH_2OH \end{array}$

Answer: B

View Text Solution

148. Ethyne on reaction with water in the presence of $HgSO_4$ and H_2SO_4 gives .....

A. Propanone

B. Ethanal

C. Ethane

D. Ethanol

Answer: B

View Text Solution

149. Which of the aldehyde is most reactive?

A. C_6H_5CHO

B. CH_3CHO

C. $HCHO$

D. $CH_3 - CH_2 - CHO$

Answer: C

View Text Solution

150. Acetaldehyde does not answer .....

A. Iodoform test

B. Lucas test

C. Benedict test

D. Tollen's reagent test

Answer: B

View Text Solution

Additional Questions Fill In The Blanks

1. The aldehyde Pyridoxal function as a .....

View Text Solution

2. The IUPAC name of $CH_3 - CH = CH - CHO$ is .....

View Text Solution

3. The IUPAC name of $CH_2 = CH - CHO$ is .....

View Text Solution

4. The formula of mesityl oxide is .....

View Text Solution

5. The name of $CH_3 - CH_2 - \underset{\underset{O}{||}}{C} - CH_2 - CHO$ is .....

View Text Solution

6. But – 2 – ene gives 2 moles of ethanal by.....

View Text Solution

7. ..... olefines give formaldehyde as one of the product.

View Text Solution

8. Calcium formate on ..... gives methanal and $CaCO_3$

View Text Solution

9. Dry distillation of ..... gives propanone and $CaCO_3$

View Text Solution

10. In Rosenmund's reduction reaction ..... is the catalyst and ..... is the catalytic poison.

View Text Solution

11. ..... selectively reduces alkyl cyanide to form imines which on hydrolysis gives aldehyde.

View Text Solution

12. Side chain oxidation of toluene in the presence of $KMnO_4$ gives .....

View Text Solution

13. The oxidising agent used to convert toluene to benzaldehyde is .....

View Text Solution

14. Acetyl chloride reacts with ..... to form acetone.

View Text Solution

15. Addition of ..... finds application in the separation and purification of carbonyl compounds.

View Text Solution

16. Aliphatic aldehyde except ..... react with an ethereal solution of ammonia to form aldimines.

View Text Solution

17. Formaldehyde reacts with ammonia to form ..... which is used to treat urinary infection.

View Text Solution

18. Nitration of Urotropine under controlled condition gives an explosive .....

View Text Solution

19. RDX is also called ..... or .....

View Text Solution

20. With ammonia, benzaldehyde form a complex condensation product called .....

View Text Solution

View Text Solution

21. The oxidation of unsymmetrical ketone is governed by .....

View Text Solution

22. The reducing agent used in Clemmensen reduction is.....

View Text Solution

23. The reducing agent used in wolf-kishner reduction is .....

View Text Solution

24. Aldehydes which do not have ..... undergo disproportionation reaction (or) cannizaro reaction.

View Text Solution

25. The reagent used in the conversion of Benzaldehyde to Benoin is .....

View Text Solution

26. In Knoevenagal reaction ..... act as the basic catalyst.

View Text Solution

27. The formula of Benzal aniline (or) Schiff's base is .....

View Text Solution

28. Benzaldehyde condenses with N, N - dimethyl aniline in the presence of strong acids to form..... .

View Text Solution

29. ..... is ammoniacal silver nitrate solution.

View Text Solution

30. ..... is a mixture of $CuSO_4$ + Sodium citrate + NaOH.

View Text Solution

31. 40% aqueous solution of formaldehyde is known as ..... .

View Text Solution

32. Paraldehyde is used in medicine as .....

View Text Solution

33. ..... is used in perfumery and as a hypnotic under the name hyphone

View Text Solution

34. ..... cannot be prepared by grignard reagent since the acid contains only one carbon atom.

View Text Solution

35. ..... is used to convert acetic acid to ethane at 473 K.

View Text Solution

36. ..... reaction is generally used for the preparation of esters of higher alcohol from that of a lower alcohol.

View Text Solution

37. The conversion of acetamide to methylamine by the action of caustic alkali and Bromine is known as .....

View Text Solution

38. ..... is used as food preservative

View Text Solution

39. ..... is used in the detection and estimation of $-OH$, $-NH_2$, groups in organic compounds.

View Text Solution

40. ..... is used in the preparation of artificial fruit essences.

View Text Solution

41. The conversion of Benzene to Benzaldehyde by the action of carbon monoxide and HCl is known as.....

View Text Solution

42. The product formed when formaldehyde condensed with acetone is .....

View Text Solution

43. Benzaldehyde condenses with acetaldehyde to form .....

View Text Solution

Additional Questions Match The Following

1. Match the column I and II using the code given below the column

Column-I	Column-II
A. $CH_2 = CH - CHO$	1. But – 2 – enal
B. $CH_3 - CH = CH - CHO$	2. Butan – 1 – al
C. $HO - CH_2 - \underset{\displaystyle OH}{\underset{\vert}{CH}} - CHO$	3. Prop – 2 – enal
D. $CH_3 - CH_2 - CH_2 - CHO$	4. 2,3 – dihydroxy propanal

Code

	A	B	C	D
a	**3**	**2**	**4**	**1**
b	1	3	2	4
c	4	1	3	2
d	2	4	1	3

View Text Solution

2. Match the column I and II using the code given below the column

Column-I	Column-II
A. Benzophenone	1. $CH_3-\overset{\overset{O}{\|}}{C}-C_6H_5$
B. Acetophenone	2. $CH_3-\overset{\overset{O}{\|}}{C}-CH_3$
C. Phenyl methanal	3. $C_6H_5-\overset{\overset{O}{\|}}{C}-C_6H_5$
D. Propanone	4. C_6H_5-CHO

Code

	A	B	C	D
a	1	2	3	4
b	**3**	**1**	**4**	**2**
c	4	3	2	1
d	2	4	1	3

View Text Solution

3. Match the column I and II using the code given below the column

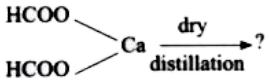
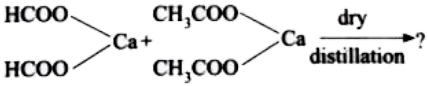
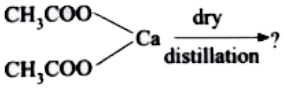
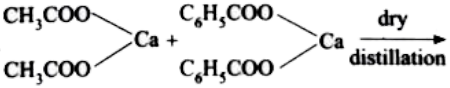
Column-I	Column-II
A. $CH_3 - CH = CH - CH_3 + O_3 \longrightarrow ?$	1. 2 HCHO
B. $CH_3 - CH = \underset{\displaystyle CH_3}{\overset{\displaystyle |}{C}} - CH_3 + O_3 \longrightarrow ?$	2. $CH_3CHO + HCHO$
C. $CH_2 = CH_2 + O_3 \longrightarrow ?$	3. $2\ CH_3CHO$
D. $CH_3 - CH = CH_2 + O_3 \longrightarrow ?$	4. $CH_3CHO + CH_3COCH_3$

Code

	A	B	C	D
a	1	2	3	4
b	4	3	2	1
c	3	4	1	2
d	2	1	4	3

View Text Solution

4. Match the column I and II using the code given below the column

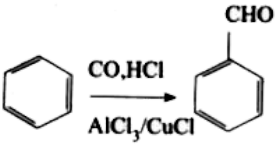
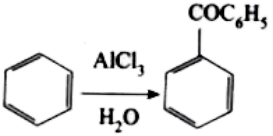
Column-I	Column-II
A. 	1. $2C_6H_5COCH_3 + 2\ CaCO_3$
B. 	2. $HCHO + CaCO_3$
C. 	3. $2CH_3CHO + 2\ CaCO_3$
D. 	4. $CH_3COCH_3 + CaCO_3$

Code

	A	B	C	D
a	2	3	4	1
b	1	2	3	4
c	3	4	1	2
d	4	1	2	3

View Text Solution

5. Match the column I and II using the code given below the column

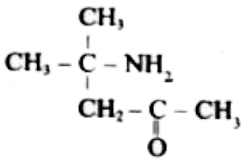
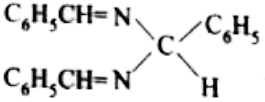
Column-I	Column-II
A. Stephen's reaction	1. 
B. Rosenmund reduction	2. $C_6H_5COCl + \xrightarrow[H_2O]{AlCl_3}$ 
C. Gattermann Koch reaction	3. $CH_3-C\equiv N \xrightarrow[H_3O^+]{SnCl_2/HCl} CH_3-CHO$
D. Friedel crafts Benzoylation	4. $CH_3-COCl + H_2 \xrightarrow{Pd/BaSO_4} CH_3CHO$

Code

	A	B	C	D
a	1	2	3	4
b	4	3	2	1
c	2	1	4	3
d	3	4	1	2

View Text Solution

6. Match the column I and II using the code given below the column

Column-I	Column-II
A. $HCHO + NH_3$	1. 
B. $CH_3CHO + NH_3$	2. $(CH_2)_6N_4$
C. $2CH_3COCH_3 + NH_3$	3. $CH_3CH = NH$
D. $2\,C_6H_5CHO + NH_3$	4. 

Code

	A	B	C	D
a	2	3	1	4
b	4	2	3	1
c	3	1	4	2
d	1	4	2	3

View Text Solution

7. Match the column I and II using the code given below the column

Column-I	Column-II
A. Cinnmaldehyde	1. Rosenmunds reduction
B. Cinnamic acid	2. Friedel crafts reaction
C. Acetaldehyde	3. Perkin's reaction
D. Benzophenone	4. Claisen schmidt condensation

Code

	A	B	C	D
a	**4**	**3**	**1**	**2**
b	1	2	3	4
c	2	1	4	3
d	3	4	2	1

View Text Solution

8. Match the column I and II using the code given below the column

Column-I	Column-II
A. Amyl acetate	1. Raspberry flavour
B. Ethyl butyrate	2. Orange flavour
C. Isobutyl formate	3. Banana flavour
D. Octyl acetate	4. Pineapple flavour

Code

	A	B	C	D
a	**3**	**4**	**1**	**2**
b	4	3	2	1
c	1	2	3	4
d	2	1	4	3

View Text Solution

9. Match the column I and II using the code given below the column

Column-I	Column-II
A. Formic acid	1. Food preservative
B. Acetic acid	2. Dehydration of hides
C. Benzoic acid	3. Artificial fruit essences
D. Ethyl acetate	4. Table vinegar

Code

	A	B	C	D
a	2	4	1	3
b	1	2	3	4
c	4	3	2	1
d	3	1	4	2

View Text Solution

10. Match the column I and II using the code given below the column

Column-I	Column-II
A. Tollen's reagent	1. Benzal aniline
B. Schiff 's base	2. Copper sulphate + sodium citrate +NaOH
C. Fehling's solution	3. Ammonia cal silver nitrate
D. Benedict's solution	4. Copper sulphate + Potassium tartrate

Code

	A	B	C	D
a	**3**	**1**	**4**	**2**
b	1	2	3	4
c	4	3	2	1
d	2	4	1	3

View Text Solution

11. Match the column I and II using the code given below the column

Column-I	Column-II
A. HCHO	1. Dye intermediate
B. CH_3CHO	2. Bakelite
C. C_6H_5CHO	3. Hypnotic
D. $C_6H_5COCH_3$	4. Silvering of mirrors

Code

	A	B	C	D
a	**2**	**4**	**1**	**3**
b	1	2	3	4
c	4	3	2	1
d	3	1	4	2

View Text Solution

12. Match the column I and II using the code given below the column

Column-I	Column-II
A. Tanning	1. Acetone
B. Medicine for urinary infection	2. Formalin
C. Hypnotic	3. Urotropin
D. Nail polish remover	4. Paraldehyde

	A	B	C	D
a	2	3	4	1
b	4	2	1	3
c	3	1	2	4
d	1	4	3	2

View Text Solution

Additional Questions Assertion And Reasons

1. Assertion(A): In Rosenmund's reduction, $BaSO_4$ act as catalyst poison.

Reason (R): In Rosenmund's reduction, $BaSO_4$ act as catalytic poison to pd catalyst so that aldehyde cannot be further reduced it alcohol.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

2. Assertion(A): Aldehydes and ketones have high high boiling point as compared to hydrocarbon and ether of comparable molecular mass.

Reason (R): It is due to weak molecular association in aldehydes and ketones arising out of the dipole - dipole interactions

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

3. Assertion(A): The boiling point of aldehydes and ketones are much lower those of corresponding alcohols and carboxylic acids.

Reason (R): Alcohols and carboxylic acids possess intermolecular hydrogen bonding and so have high boiling point.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: B

View Text Solution

4. Assertion(A): Aldehydes and ketones have high dipole moment.

Reason (R): The carbonyl group of aldehydes and ketones contain a double bond between carbon and oxygen. Oxygen is more electronegative than carbon and it attracts the shared pair of electron which makes the carbonyl group as polar.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

5. Assertion(A): Addition of sodium bisulphite finds application in the separation and purification of carbonyl compound.

Reason (R): The bisulphite addition compound is water soluble and the

solution is treated with mineral acid to regenerate the carbonyl compounds.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

6. Assertion(A): Acetaldehyde does not undergo cannizaro reaction.

Reason (R): Cannizaro reaction is a characteristic of aldehyde having no α -H atom. Acetaldehyde contains 3 α -H atoms.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

7. Assertion(A): Acetaldehyde and acetone are readily undergo aldol condensation reaction in the presence of dilute base.

Reason (R): Aldehyde or ketone having a - hydrogen atom add together to give aldol or ketol.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: B

View Text Solution

8. Assertion(A): Carboxylic acids have higher boiling point than aldehyde and ketone of comparable molecular mass.

Reason (R): This is due to more association of carboxylic acid. Molecules through intermolecular hydrogen bonding.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: B

View Text Solution

9. Assertion(A): Lower aliphatic carboxylic acids are miscible with water but higher carboxylic acids are insoluble in water.

Reason (R): Lower carboxylic acids are able to form hydrogen bond with

water whereas higher carboxylic acids have increased hydrophobic interaction of hydrocarbon part.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

10. Assertion(A): Carboxylic acid do not give the characteristic reaction of carbonyl group as given by aldehyde and ketone.

Reason (R): The carbonyl carbon of carboxylic acid is involved in resonance

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: C

View Text Solution

11. Assertion(A): Benzoic acid does not undergo friedel crafts reaction.

Reason (R): This is due to the strong deactivating nature of the carboxyl group

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

12. Assertion(A): Formic acid can act as a strong reducing agent

Reason (R): Formic acid contains both aldehyde as well as an acid group.

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: D

View Text Solution

13. Assertion(A): Trichloro acetic acid is more acidic than acetic acid.

Reason (R): Cl - is a electron withdrawing group and acidity increases with increasing number of electron withdrawing substituents on the α - carbon. (a) Both A and R are correct and R is the correct

A. Both A and R are correct and R is the correct explanation of A.

B. Both A and R are correct but R is not correct explanation of A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

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Additional Questions Find The Odd Out And Give The Reasons

1. Find the odd one out and give the reasons.

A. Methanal

B. Ethanal

C. Phenyl methanal

D. Prop-2-enal

Answer: c

View Text Solution

2. Find the odd one out and give the reasons.

A. Formic acid

B. Acetic acid

C. Benzoic acid

D. Propanoic acid

Answer: a

View Text Solution

3. Find the odd one out and give the reasons.

A. HCHO

B. C_6H_5CHO

C. CCl_3CHO

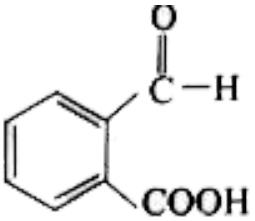
D. CH_3CHO

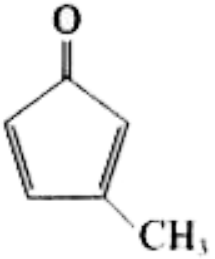
Answer: d

View Text Solution

Additional Questions 2 Marks Questions

1. Write the name of the following compounds.

(i) 

(ii) 

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2. What happens But - 2 - ene is ozonised followed by hydrolysis?

View Text Solution

3. Explain the action of ozone with 2-methyl but - 2 - ene followed by hydrolysis with zinc?

View Text Solution

4. What happens when Ethyne is hydrolysed in the presence of $HgSO_4$ and H_2SO_4 ?

View Text Solution

5. How would you convert prop-1-yne to propanone?

View Text Solution

6. Explain about the dry distillation of Calcium ethanoate.

View Text Solution

7. Explain Rosenmund reduction.

View Text Solution

8. Explain Stephen's reaction.

View Text Solution

9. Explain the action of Diisobutyl aluminium hydride (DIBAL-H) and H_2O with hex - 4- en nitrile.

View Text Solution

10. Explain about Gattermann - koch reaction.

View Text Solution

11. How would you manufacture benzaldehyde from toluene?

View Text Solution

12. Explain the action of dialkyl cadmium with acetyl chloride?

View Text Solution

13. Explain the nucleophilic addition of HCN with ethanal?

View Text Solution

14. Which reaction finds application in the separation and purification of carbonyl compound? Explain.

View Text Solution

15. Complete the following reactions.

(i) $CH_3 - \overset{H}{\underset{|}{C}} = O \xrightarrow[K_2Cr_2O_7]{\text{acidified}} ? (ii) CH_3 - \underset{O}{\overset{||}{C}} - CH_3 \xrightarrow{conc.HNO_3} ?$

View Text Solution

16. What is Clemmensen reduction ? Explain it.

View Text Solution

17. Complete the following reactions.

(i) $CH_3 - \underset{O}{\overset{||}{C}} - CH_3 \xrightarrow[conc.HCl]{Zn+Hg} ?$

(ii) $CH_3 - \underset{O}{\overset{||}{C}} - H \xrightarrow[C_2H_5ONa]{NH_2-NH_2} ?$

View Text Solution

18. Explain Wolf Kishner reduction with suitable example.

View Text Solution

19. How would you obtain chloroform from acetone?

View Text Solution

20. What happen when alcoholic KCN reacts with Benzaldehyde? (or) explain Benzoin condensation.

View Text Solution

21. Explain about Schiff's reagent test?

View Text Solution

22. What are used of Urotropine? Give its structure.

View Text Solution

23. Mention the uses of aromatic ketone.

View Text Solution

24. Write the structure and IUPAC name of the following compounds?

(i) Malonic acid (ii) Succinic acid (iii) Glutaric acid (iv) Adipic acid

View Text Solution

25. Starting from methyl magnesium iodide, how would you prepare acetic acid?

View Text Solution

26. Convert phenyl magnesium bromide into Benzoic acid?

View Text Solution

27. Explain the hydrolysis reaction of the following with equation?

(i) $(CH_3CO)_2O$

(ii) $(C_6H_5CO)_2O$

View Text Solution

28. Explain the action of alkaline potassium permanganate with toluene?

View Text Solution

29. Lower aliphatic carboxylic acids are miscible with water but higher carboxylic acids are insoluble in water. Give reason. (or) Acetic acid is soluble in water but hexanoic acid in insoluble in water. Why?

View Text Solution

30. What is Vinegar? How will you get glacial acetic acid?

View Text Solution

31. Explain the action of the following reagents with acetic acid.

(i) PCl_5

(ii) $SOCl_2$

View Text Solution

32. Complete the following reactions.

$$CH_3COCl \xrightarrow{Pd\,/\,BaSO_4} A \xrightarrow[concHCl]{Zn+Hg} B$$

View Text Solution

33. What happens when thionyl chloride reacts with benzoic acid?

View Text Solution

34. Explain Kolbe's electrolytic decarboxylation.

View Text Solution

35. What happens when ammonia reacts with acetic acid?

View Text Solution

36. Explain the action of heat on acetic acid in the presence of phosphorous pentoxide.

View Text Solution

37. Explain the α - halogenation take place in acetic acid. (or) Explain Hell-Volhard-zelinsky reaction (HVZ reaction)?

View Text Solution

38. Acidity increases with increasing number of electron - withdrawing substituents on the α - carbon. Explain with example.

View Text Solution

39. Trichloro acetic acid is more acidic than acetic acid. Give reason.

View Text Solution

40. Fluoro acetic acid is more acidic than iodoacetic acid. Give reason.

View Text Solution

41. What are carboxylic acid derivatives? Give four examples.

View Text Solution

42. Which is the best method to prepare acetyl chloride from acetic acid? why?

View Text Solution

43. Acetyl chloride fumes when exposed to air. Give reason.

View Text Solution

44. What happens when acetyl chloride is treated with ethanol?

View Text Solution

45. Explain ammonolysis reaction of acid chloride (or) what happens when ammonia reacts with acetyl chloride?

View Text Solution

46. What happens when acetic anhydride reacts with ethyl alcohol?

View Text Solution

47. Explain the reaction of ammonia with acetic anhydride.

View Text Solution

48. Complete the following reaction.

$$CH_3 - \underset{\underset{O}{||}}{C} - O - \underset{\underset{O}{||}}{C} - CH_3 + PCl_5 \rightarrow A + B$$

View Text Solution

49. What is transesterification? Explain with example.

View Text Solution

50. Explain the action of ammonia with ethyl acetate.

View Text Solution

51. How is ethyl acetate react with PCI?

View Text Solution

52. What happens when methyl cyanide is partially hydrolysed by cold conc.HCI?

View Text Solution

53. Explain the action of P_2O_5 , with acetamide with equation.

View Text Solution

54. Describe Hoffmann degradation reaction. (or) How would you obtain methyl amine from acetamide?

View Text Solution

55. How would you preparate ethyl amine from acetamide?

View Text Solution

56. What are the used of acetyl chloride?

View Text Solution

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

(i) Ethanal, Propanal, Propanone, Butanone

(ii) Benzaldehyde, p - Tolualdehyde, p - Nitrobenzaldehyde, Acetophenone

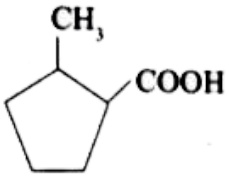
View Text Solution

58. Give the IUPAC names of the following compounds:

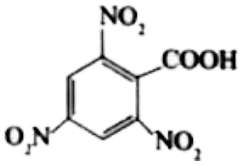
(i) $PhCH_2CH_2COOH$

(ii) $(CH_3)_2C = CHCOOH$

(iii)



(iv)



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

View Text Solution

60. How is aminoethane obtained from ethanal (acetaldehyde)?

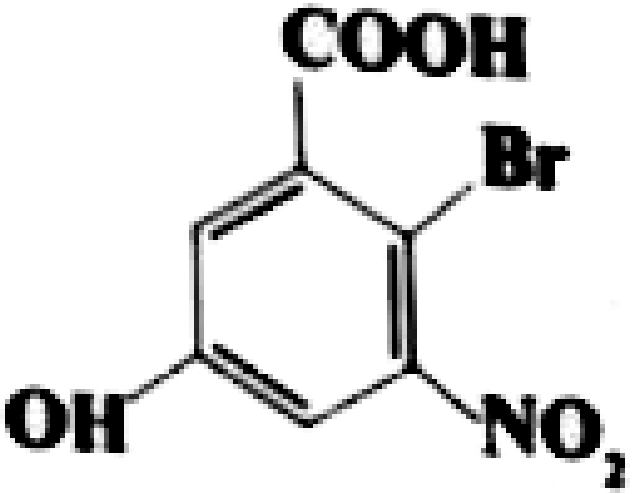
View Text Solution

61. Why HCOOH does not give Hell-Volhard Zelinsky reaction but CH_3COOH does?

View Text Solution

62. Write IUPAC names of the following:

(i) $HOOC - CH_2 - \underset{\underset{CH_2}{|}}{C} = CHCOOH$



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63. Give chemical tests to distinguish between the following pair of compounds.

(i) Phenol and Benzoic acid (ii) Benzaldehyde and Acetophenone

View Text Solution

64. Give chemical tests to distinguish between the following pair of compounds.

(i) Propanoyl chloride and propanoic acid (ii) Benzaldehyde and Acetophenone

View Text Solution

65. Give chemical tests to distinguish between the following pair of compounds.

(i) Propanal and propanone (ii) Benzaldehyde and Benzoic acid

View Text Solution

66. Out of acetophenone and benzophenone, which one will give iodoform test? Write the reaction involved. (The compound should have CH_3CO group to show the iodoform test).

View Text Solution

67. Why does methanal not give aidol condensation while ethanol forms an aldol?

View Text Solution

Additional Questions 3 Marks Questions

1. Draw the structure and IUPAC name of the following compounds.

(i) Acrolein (ii) Crotonaldehyde (iii) Glyceraldehyde

View Text Solution

2. Draw the structure and IUPAC name of the following compounds.

(i) Mesityl oxide (ii) Acetophenone (iii) Benzophenone

View Text Solution

3. Explain about the structure of carbonyl group.

View Text Solution

4. How are the following compounds are prepared by the dry distillation of calcium salt of carboxylic acids?

(i) Methanal (ii) Ethanal

View Text Solution

5. How will you prepare benzaldehyde from methyl benzene? (or) Explain Etard reaction.

View Text Solution

View Text Solution

6. How would you prepare the following compounds by Friedel Crafts acylation?

(i) Acetophenone (ii) Benzophenone

View Text Solution

7. Aldehydes and ketones have high boiling point as compared to hydrocarbons and ethers of comparable molecular mass and less than that of alcohols. Give reason.

View Text Solution

8. Explain the mechanism of nucleophilic addition reactions of aldehyde and ketone?

View Text Solution

9. How acetone reacts with the following reagents?

$(i) NH_2OH (ii) NH_2 - NH_2 (iii) C_6H_5NH - NH_2$

View Text Solution

10. What is Urotropine? How is it prepared? Mention its structure and uses.

View Text Solution

11. What is popoff's rule? Explain with an example.

View Text Solution

12. Explain the action of magnesium amalgam and water with acetone?

View Text Solution

13. Describe crossed aldol condensation with two examples.

View Text Solution

14. Explain Claisen - Schmidt condensation.

View Text Solution

15. What is crossed cannizaro reaction? Explain it.

View Text Solution

16. How will you prepare malachite green dye from Benzaldehyde?

View Text Solution

17. How is chlorine react with Benzaldehyde?

(i) In the presence of catalyst

(ii) in the absence of catalyst

View Text Solution

18. Explain about 3 test for aldehyde

View Text Solution

19. Mention the uses of formaldehyde.

View Text Solution

20. What are the uses of acetaldehyde?

View Text Solution

21. Write about the uses of Acetone.

View Text Solution

22. What are the uses of Benzaldehyde?

View Text Solution

23. Carboxylic acids have higher boiling point than aldehyde, keton and even alcohols of comparable molecular masses. Give reason.

View Text Solution

24. What happens when ethanoic acid reacts with the following reagents?

$(i) LiAIH_4$ (ii) Red P, HI

View Text Solution

25. Explain the action of sodalime with sodium acetate. Name the type of reaction involved in it

View Text Solution

26. Explain about electrophilic substitution in Benzoic acid with example.

View Text Solution

27. Formic acid act as reducing agent. Prove this statement.

View Text Solution

28. Give three test for carboxylic acid.

View Text Solution

29. Write a note about acidity of carboxylic acids.

View Text Solution

30. Formic acid is more stronger than acetic acid. Justify this statement.

View Text Solution

31. Explain the order of relative reactivity of acid derivatives.

View Text Solution

32. Explain the following reaction with acetyl chloride (i) ammonolysis.

View Text Solution

33. Explain the action of the following reagents with acetyl chloride?

(i) $Pd/BaSO_4$

(ii) $LiAlH_4$

View Text Solution

34. Describe about Claisen condensation.

View Text Solution

35. Acid amides are generally amphoteric in nature. Justify this statement.

View Text Solution

36. Mention the uses of formic acid?

View Text Solution

37. What are the uses of acetic acid?

View Text Solution

38. Indicate the uses of Benzoic acid.

View Text Solution

39. What are the uses of acetic anhydride?

View Text Solution

40. Mention the uses of Ethyl acetate?

View Text Solution

41. Give reasons for the following.

(i) Carboxylic acids do not give characteristic reactions of carboxyl group

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

(iii) Sodium bisulphite is used for the purification of aldehydes and ketones.

View Text Solution

42. (i) Describe the preparation of acetic acid from acetylene.

(ii) How can the following be obtained from acetic acid: (a) Acetone (b) Acetaldehyde?

(iii) In what way can acetic acid be distinguished from acetone?

(iv) Why carboxylic acid do not give the characteristic reactions of a carbonyl group?

View Text Solution

43. Account for the following

(i) $CI-CH_2COOH$ is a stronger acid than CH_3COOH

(ii) Carboxylic acids do not give reactions of carbonyl group.

View Text Solution

44. A group of students were given to study the properties of aldehydes and ketones in the lab. They recorded a few observation of their physical properties.

(i) Why are aldehydes more reactive and more soluble than ketones?

(ii) What values of students are seen from the above act?

View Text Solution

45. How will you distinguish between methanol and ethanol?

View Text Solution

46. There are two $-NH_2$ group in semicarbazide. However, only one is involved in the formation of semicarbazone. Why?

View Text Solution

47. Explain why o - hydroxybenzaldehyde is a liquid at room temperature while p-hydroxybenzaldehyde is a high melting solid ?

View Text Solution

48. A compound 'X' (C_2H_4O) on oxidation gives 'Y' $(C_2H_4O_2)$, 'X' undergoes haloform reaction. On treatment with HCN 'X' form a product 'Z' which on hydrolysis gives 2- hydroxy propanoic acid.

(i) Write down the structures of 'X' and 'Y'

(ii) Name the product when 'X' reacts with dil NaOH.

(iii) Write down the equations for the reaction involved.

View Text Solution

49. (i) How will you prepare:

(a) Acetic anhydride and (b) Acetyl chloride from acetic acid? . Write the reactions involved in each case.

(ii) Why is the boiling point of an acid anhydride higher than the acid from which it is derived?

View Text Solution

50. Suggest a reason for the large difference in the boiling point of butanol and butanal, although they have the same solubility in water.

View Text Solution

Additional Questions 5 Marks Questions

1. Explain the action of ammonia with the following compounds.

(i) OHCHO

(ii) CH_3CHO

(iii) $CH_3 - \underset{\underset{O}{||}}{C} - CH_3$

(iv) C_6H_5CHO

View Text Solution

2. Explain the mechanism of aldol condensation.

View Text Solution

3. Explain the mechanism of Cannizaro reaction.

View Text Solution

4. Explain (i) Perkin's reaction (ii) Knoevenagal reaction.

View Text Solution

5. Explain about electrophilic substitution reaction of benzaldehyde and acetophenone

View Text Solution

6. How would you prepare acetic acid from the following compounds. (i) Ethyl alcohol (ii) Methyl cyanide (iii) Ethyl acetate

View Text Solution

7. What is esterification? Explain the mechanism of esterification.

View Text Solution

8. An organic compound (A) (molecular formula $C_8H_{16}O_2$) was hydrolysed with dilute sulphuric acid to give a carboxylic acid (B) and an

alcohol (C). Oxidation of (C) with chromic acid produced (B). (C) on dehydration gives but -1-ene. Write equations for the reactions involved.

View Text Solution

9. An organic compound (A) of molecular formula C_6H_6 reacts with Br_2 in the presence of $FeCl_3$ gives (B) of formula C_6H_5Br . B on treatment with mg in the presence of dry ether gives (C) compound (C) on treatment with dry ice followed by hydrolysis gives a compound (D) of molecular formula $C_7H_6O_2$ Identify A,B,C,D and explain the reactions involved.

View Text Solution

10. A simplest aromatic hydrocarbon (A) reacts with methyl chloride in the presence of $AICI_3$ gives (B) C_7H_8 Compound (B) reacts with Br, along with light gives (C) of molecular formula C_7H_7Br (C) reacts with alcohol KCN gives (D) (C_8H_7N) (D) on acid hydrolysis gives (E) of formula $C_8H_8O_2$. Identify A,B,C,D,E and explain the reactions involved.

View Text Solution

11. An organic compound (A) is a calcium salt of acetic acid. (A) on dry distillation gives (B) of formula C_3H_6O . (B) on reaction with $LiAIH_4$ gives (C) of formula $C_3H_8O(C)$ on heating with conc. H_2SO_4 gives (D) of molecular formula C_3H_6 . Identify A,B,C,D and explain the reaction involved.

View Text Solution

12. An organic compound (A) of molecular formula C_7H_8O on oxidation with alkaline $KMnO_4$ gives (B) of formula C_7H_6O . (B) on reaction with Cl_2 in the presence of catalyst $FeCl_3$ gives (C) of formula C_2H_5OCI . (B) on reaction with Cl_2, in the absence of catalyst gives C_7H_5OCl . Identify A,B,C,D and explain the reaction involved.

View Text Solution

13. An organic compound (A) of molecular formula C_7H_6O reacts with acedaldehyde in the presence of sodium ethoxide gives (B) of formula C_9H_8O an unsaturated aldehyde. Compound (A) reacts with acetic anhydride in the presence of sodium acetate gives (C) and (D) of formula $C_9H_8O_2 \& C_2H_4O_2$ respectively. Identify A,B,C,D and explain the reaction involved.

View Text Solution

14. An aromatic aldehyde (A) of molecular C_7H_6O reacts with acidified $KMnO_4$ to give (B) of molecular formula $C_7H_6O_2$, calcium salt' of compound (B) on dry distillation gives (C) of molecular formula $C_{13}H_{10}O$. Compound (C) on Clemmenson's reduction, gives (D) of formula $C_{13}H_{12}O$. Identify A,B,C,D and explain the reaction involved.

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15. A simplest aromatic hydrocarbon (A) of formula C_6H_6 reacts with Bromine to gives (B) of molecular formula C_6H_5Br . (B) on treatment

with magnesium metal in the presence of dry ether gives (C).(C) on reaction with formaldehyde followed by acid hydrolysis gives (D) of formula C_7H_8O . Identify A,B,C,D and explain the reaction involved.

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16. An organic compound (A) of molecular formula C_2H_3n on acid hydrolysis gives (B) of molecular formula $C_2H_4O_2$ calcium salt of (B) gives (C) of molecular formula C_3H_6O Compound (C) on reduction of hydrazine and sodium ethoxide gives (D) of molecular formula C_3H_8 . Identify A,B,C,D and explain the reaction involved.

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17. An organic compound (A) of molecular formula C_7H_8 on reaction with hot alkaline $KMnO_4$ gives (B) of formula $C_7H_6O_2$ which gives brisk effervescence with $NaHCO_3$ solution. (B) on reaction with sodium hydroxide gives (C) of formula $C_7H_5O_2Na$ Compound (C) on treatment with sodalime gives (D) the simplest aromatic hydrocarbon.

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18. An organic compound (A) molecular formula C_3H_6O is resistant to oxidation but form a compound (B) (C_3H_8O) on reduction (B) reacts with HBr to form a bromide (C) which on treatment with alcoholic KOH forms an alkene (D) (C_3H_6) . Deduce the structures of A,B,C and D.

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19. An organic compound (A) of molecular formula C_6H_6O gives violet colour with neutral $FeCl_3$. (A) on reaction with zinc dust gives (B) of formula C_6H_6 (B) on treatment with acetyl chloride in the presence of anhydrous $AICI_3$ gives (C) of formula C_8H_8O . (C) on Clemmenson reduction gives (D) of formula $C_8H_{10}O$. Identify A,B,C,D and explain the reaction involved.

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20. An organic compound (A) of molecular formula C_3H_6O reduces Tollen's reagent on reaction with methyl magnesium bromide followed by acid hydrolysis gives (B) of formula $C_4H_{10}O$ (B) gives blue colour in victor meyer test. (B) on reaction with Cu at 573 K gives (C) of formula C_4H_8O (C) on reaction with hydrazine and sodium ethoxide gives (D) of 'molecular formula C_4H_{10} . Identify A,B,C,D and explain the reactions involved.

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21. An organic compound (A) of molecular formula $C_7H_6O_2$ reacts with PCI_5 to give (B) of formula C_7H_5OCl . (B) on treatment with ammonia gives (C) of formula C_7H_7NO (C) on treatment with phosphorous pentoxide gives (D) of formulaC_7H_5N . Identify A,B,C,D and explain the reactions involved.

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22. An organic compound (A) of molecular formula C_3H_6 on hydration in the presence of H_2SO_4 gives (B) C_3H_2O which gives blue colour in victor meyer's test. (B) on treatment with cu at 573 K gives C_3H_6O a compound (C) on self condensation in the presence of magnesium amalgam and water gives (D) of formula $C_6H_{14}O_2$. Identify A,B,C,D and explain the reaction involved.

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23. An organic compound (A) of molecular formula C_2H_4O reduces tollen's reagent to silver mirror. (A) on treatment with C_2H_5MgBr followed by acid hydrolysis gives (B) of formula $C_4H_{10}O$. (B) on reaction with Cu at 573 K gives (C) of formula C_4H_8O which does not reduce tollen's reagent but answers iodoform test. Identify A,B,C,D and explain the reaction involved.

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24. An unknown aldehyde 'A' on reacting with alkali gives a b-hydroxy-aldehyde, which loses water to form an unsaturated aldehyde, 2 - butenal. Another aldehyde 'B' undergoes disporportionation reaction in the presence of conc. alkali to form products C and D. C is an aryl alcohol with formula C_7H_8O . (i) Identify A and B. (ii) Write the sequence of reactions involved (iii) Name the product, when 'B' reacts with Zn amalgam and hydrochloric acid.

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25. An organic compound (A) of molecular formula C_4H_8 is symmetric alkene. (A) on ozonolysis gives 2 moles (B) of molecular formula C_2H_4O . (B) on reaction with ammonia gives (C) of molecular formula C_2H_5N

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26. An organic compound (A) of molecular formula $C_2H_4O_2$ gives brisk effervescence with sodium carbonate. (A) on reaction with thiony chloride

gives (B) of formula C_2H_3OCl . (B) on reaction with $Pd/BaSO_4$ gives (C) of molecular formula C_2H_4O that reduces Tollen's reagent to silver mirror. (C) on reaction with dilute NaOH gives (D) of molecular formula $C_4H_8O_2$. . Identify A,B,C,D and explain the reactions involved.

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27. An organic compound (A) of molecular formula C_7H_8 reacts with Cl_2 , in the presence of hv light gives (B) of formula $C_7H_6Cl_2$. (B) on hydrolysis at 373 k gives (C) of formula C_7H_6O . (C)on treatment with 50% NaOH gives (D) and (E). Identify A,B,C,D,E and explain the reactions involved.

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28. An organic compound (A) of molecular formula C_2H_3OCI on reaction with pd and $BaSO_4$ gives (B) of formula C_2H_4O . (B) on reaction with $LiAIH_4$ gives (C) of formula C_2H_6O . (B) on reaction with I_2 and NaOH

gives (D) of formula CH_2ONa and iodoform. Identify A,B,C,D and explain the reactions involved.

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29. An organic compound (A) of molecular formula C_7H_6O gives brisk effervescence with Na_2CO_3 . Sodium salt of (A) on treatment with sodalime gives (B) a simplest aromatic hydrocarbon. (B) on reaction with acetylchloride in the presence of anhydrous $AlCl_3$ gives (C) of formula C_8H_8O . (C) on treatment with conc. nitric acid and conc. sulphuric acid gives (D) of formula $C_8H_7NO_3$. Identify A,B,C,D,E and explain the reactions involved.

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30. An organic compound (A) of molecular formula C_2H_6O on reaction with acidified $K_2Cr_2O_7$ gives (B) of molecular formula C_2H_4O which on further oxidation gives (C) of molecular formula C_2H_4O . Compound (C)

reacts with (A) in the presence of conc. H_2SO_4 gives (D) of molecular formula $C_4H_8O_2$. Identify A,B,C,D and explain the reaction involved.

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31. An organic compound (A) of molecular formula $C_2H_4O_2$ gives brisk effervescence with Na_2CO_3 . Acetyl chloride reacts with sodium acetate to give $C_4H_6O_3$ as (B). (B) on reaction with PCl_5 gives (C) of formula C_2H_2OCI . (C) on reaction with ammonia gives (D) of molecular formula C_2HNO . Identify A,B,C,D and explain the reactions involved.

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32. An organic compound (A) of molecular formula $C_2H_4O_2$ reacts with PCI_5 to give (B) of formula C_2H_3OCI . (B) on treatment with ammonia gives (C) of formula C_2H_5NO . (C) on reaction with Br_2 and KOH gives CH_5N as (D). Identify A,B,C,D and explain the reactions involved.

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33. An organic compound (A) of molecular formula C_2H_5NO on treatment with $LiAlH_4$ gives (B) of formula C_2H_7N . (A) on treatment with Br_2 and excess of caustic alkali gives (C) of formula CH_5N . (A) on treatment with phosphorous pentoxide gives (D) of molecular formula C_2H_3N Identify A,B,C,D and explain the reactions involved.

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34. An organic compound (A) of molecular formula C_2H_3NO on reaction with P_2O_5, gives C_2H_3N (B). (B) on hydrolysis gives (C) of formula $C_2H_4O_2$ (C) on reaction with $LiAlH_4$ gives (D) formula C_2H_6O Identify A,B,C,D and explain the reactions involved.

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