CHEMISTRY

BOOKS - MTG GUIDE

ALCOHOLS, PHENOLS AND ETHERS

Illustration

1. Write IUPAC name of the following compound :

$$HO - CH_2 - \underset{\underset{OH}{|}}{CH} - CH_2 - OH$$

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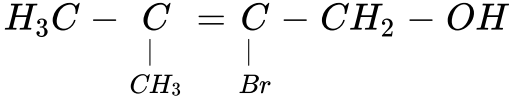
2. Write IUPAC name of the following compound :



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3. Of the two hydroxy organic compounds ROH and R'OH, the first one is basic and other is acidic in behaviour. How is R different from R'?

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4. Give the names of the reagents of bringing about the following transformations :

Hexan-1-ol to hexanal

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5. Give the names of the reagents of bringing about the following transformations :

But-2-ene to ethanol

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6. Predict the products of the following reactions :

$$CH_3 - CH = CH_2 \xrightarrow[(ii)\, 3H_2O_2 / OH^-]{(i)\, B_2H_6} ?$$

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7. Predict the products of the following reactions :

$$CH_3CH_2OH \xrightarrow{Cu / 573K} ?$$

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8. Why phenol undergoes electrophilic substitution more easily than benzene?

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9. Give a separate chemical test of distinguish between the following pairs of compounds :

Ethanol and Phenol

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10. Give a separate chemical test of distinguish between the following pairs of compounds :

2-Pentanol and 3-Pentanol

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11. Account for the following :

Preparation of ethers by acid dehydration of secondary or tertiary alcohols is not a suitable method.

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12. Phenylmethyl ether reacts with HI to give phenol and methyl iodide and not iodobenzene and methyl alcohol. Why?

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

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Neet Cafe Topicwise Practice Questions

1. Vinyl carbinol is

A. $HO - CH_2CH = CH_2$

B. $CH_3C(OH) = CH_2$

C. $CH_3 - CH = CH - OH$

D. $CH_3C(CH_2OH) = CH_2$

Answer: A

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2. A compound $C_6H_{14}O_2$ has two tertiary alcoholic groups. The IUPAC name of this compound is

A. 2, 3-dimethyl - 1, 2-butanediol

B. 3, 3-dimethyl - 1, 2-butanediol

C. 2, 3-dimethyl - 2, 3-butanediol

D. 2-methyl - 2, 3-pentanediol

Answer: C

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3. Which of the following boiling point order is correct?

A. pentan-1-ol $>$ butan-1-ol $>$ butan-2-ol $>$ propan-1-ol

B. butan-1-ol $>$ pentan-1-ol $>$ butan-2-ol $>$ propan-1-ol

C. butan-2-ol $>$ butan-1-ol $>$ pentan-1-ol $>$ propan-1-ol

D. propan-1-ol $>$ butan-1-ol $>$ butan-2-ol $>$ pentan-1-ol

Answer: A

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4. Reaction, $\underbrace{CO + H_2}_{\text{Water hgas}} + H_2 \xrightarrow[Cr_2O_3 - ZnO]{673K, 300atm.} ?$

may be used for the manufacture of

A. HCHO

B. CH_3COOH

C. HCOOH

D. CH_3OH

Answer: D

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5. Total number of isomeric alcohols with formula $C_4H_{10}O$ is

A. 2

B. 1

C. 3

D. 4

Answer: D

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6. An industrial method for the preparation of methanol is

A. by reacting CH_4 with steam at $900^\circ C$ with nickel catalyst

B. by reduction of HCHO with $LiAlH_4$

C. by catalytic reduction of CO in presence of ZnO - Cr_2O_3

D. by reaction of HCHO with $NaOH_{(aq)}$.

Answer: C

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7. Identify (Z) in the following reaction series :

$$\text{Ethanol} \xrightarrow{PBr_3} (X) \xrightarrow{Alc.KOH} (Y) \xrightarrow[H_2O,\text{heat}]{H_2SO_4,\text{room temp.}} (Z)$$

A. $CH_2 = CH_2$

B. CH_3CH_2OH

C. $CH_3CH_2OSO_3H$

D. $C_2H_5OC_2H_5$

Answer: B

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8. The group reagent for the test of alcohols is

A. ceric ammonium nitrate

B. Schiff's reagent

C. Molisch's reagent

D. bromine water.

Answer: A

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9. The compound which reacts fastest with Lucas reagent at room temperature is

A. butan-1-ol

B. butan-2-ol

C. 2-methylpropan-1-ol

D. 2-methylpropan-2-ol

Answer: D

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10. Which one of the following will produce a primary alcohol by reacting with CH_3MgI?

A. Ethylene oxide

B. Ethyl acetate

C. Methyl cyanide

D. Acetone

Answer: A

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11. In the synthesis of glycerol from propene, the steps involved are

A. allyl chloride and glycerol β-chlorohydrin

B. glycerol trichloride and glycerol α-chlorohydrin

C. allyl alcohol and α-chlorohydrin

D. allyl alcohol and monosodium glycerolate.

Answer: A

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12. Which one of the following is strongest conjugate base?

A. $(CI_3)_3CO^-$

B. $(CH_3)_3CO^-$

C. $(CI_3C)_3CO^-$

D. $(CBr_3)_3CO^-$

Answer: B

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13. Order of esterification of alcohols is

A. $3^\circ > 2^\circ > 1^\circ$

B. $2^\circ > 3^\circ > 1^\circ$

C. $1^\circ > 2^\circ > 3^\circ$

D. none of these.

Answer: C

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14. n-Propyl alcohol and isopropyl alcohol can be chemically distinguished by

A. PCl_5

B. reduction

C. oxidation with potassium dichromate

D. ozonolysis

Answer: C

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15. Which of the following are the starting materials for the synthesis of tert-butyl alcohol?

A. $CH_3MgI + CH_3COCH_3$

B. $CH_3MgI + CH_3CHOHCH_3$

C. $CH_3CH_2MgBr + CH_3COCH_3$

D. $CH_3CH_2MgBr + CH_3CHO$

Answer: A

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16. Hydrolysis of oils and fats gives glycerol and long chain fatty acids containing mostly

A. even number of carbon atoms

B. odd number of carbon atoms

C. three to five carbon atoms

D. none of these

Answer: A

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17. Saponification means hydrolysis of an ester with

A. dil. NaOH

B. dil. H_2SO_4

C. enzymes

D. all of these

Answer: A

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18. The alcohol which forms fats with fatty acids is

A. ethanol

B. methanol

C. isopropyl alcohol

D. glycerol

Answer: D

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19. A mixture of glyceryl trinitrate and glyceryl dinitrate is

A. an explosive

B. a medicine

C. soap

D. a complex compound.

Answer: A

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20. Which one/ones of the following reactions will yield 2-propanol?

I. $CH_2 = CH - CH_3 + H_2O \xrightarrow{H^+}$

II. $CH_3 - CHO \xrightarrow[(ii)\, H_2O]{(i)\, CH_3MgI}$

III. $CH_2O \xrightarrow[(ii)\, H_2O]{(i)\, C_2H_5MgI}$

IV. $CH_2 = CH - CH_3 \xrightarrow{\text{Neutral } KMnO_4}$

A. I and II

B. II and III

C. I and III

D. II and IV

Answer: A

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21. The reagent required to convert propene to 1-propanol is

A. B_2H_6 followed by $H_2O_2 / NaOH$

B. conc. H_2SO_4 followed by hydrolysis with boiling water

C. HBr followed by hydrolysis with aqueous KOH

D. $Hg(OCOCH_3)_2$ followed by reaction with $NaBH_4$.

Answer: A

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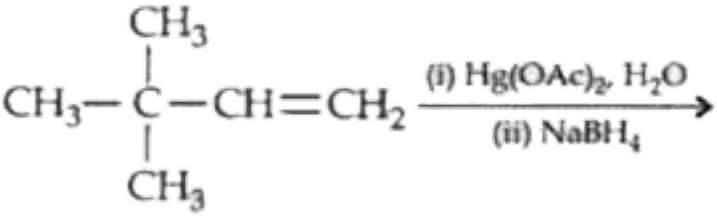
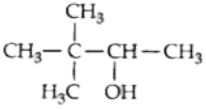
22. The product of the following reaction,



A.



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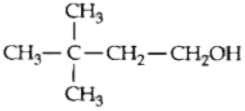

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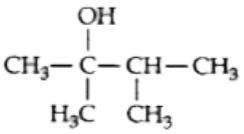
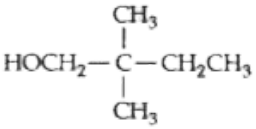


D.



Answer: A

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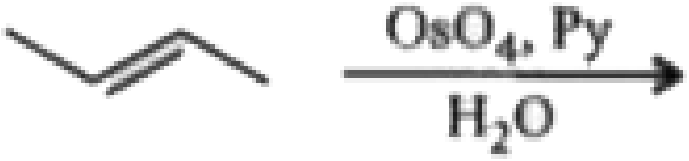
23. What is the product of the following reaction?



A. $CH_3CH = O$

B. racemic (2R, 3R) and (2S, 3S)-2,3-butanediol

C. cis-2,3-epoxybutane

D. meso-2,3-butanediol

Answer: D

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24. Which of the following diols would cleave into two fragments with HIO_4?

A. 1,3-Hexanediol

B. 2,4-Hexanediol

C. 1,6-Hexanediol

D. 3,4-Hexanediol

Answer: D

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25. Phenyl magnesium bromide reacts with methanol to give

A. a mixture of anisole and Mg(OH)Br

B. a mixture of benzene and Mg(OMe)Br

C. a mixture of toluene and Mg(OH)Br

D. a mixture of phenol and Mg(Me)Br.

Answer: B

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26. Which one of the following on oxidation gives a ketone?

A. Primary alcohol

B. Secondary alcohol

C. Tertiary alcohol

D. All of these

Answer: B

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27. When neo-pentyl alcohol is treated with H_2SO_4, a mixture of two alkenes (85 : 15) is formed. Which statements is correct about these alkenes?

A. Both give same major product with HBr.

B. Both give same products (major) with $HBr / R_2O_2 / \text{light}.$

C. The alkene which is formed in 85% concentration has higher heat of hydrogenation than the other one obtained in 15% concentration.

D. Both give same product on ozonolysis.

Answer: A

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28. Ethyl alcohol gives ethyl chloride with the help of

A. $SOCl_2$

B. NaCl

C. $CaCl_2$

D. KCl

Answer: A

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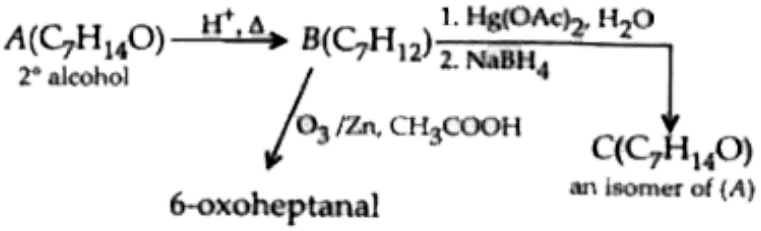
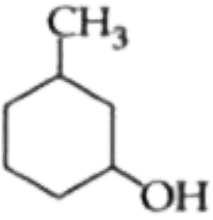
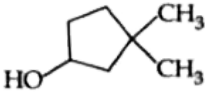
29. Identify (A) in the following scheme.



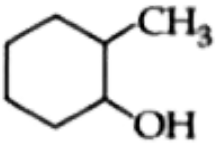
A.



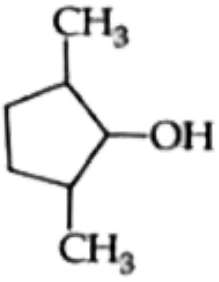
B.



C.



D.



Answer: C

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30. A liquid was mixed with ethanol and a drop of concentrated H_2SO_4 was added. A compound with a fruity smell was formed. The liquid was

A. CH_3OH

B. HCHO

C. CH_3COCH_3

D. CH_3COOH

Answer: D

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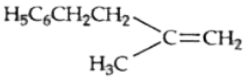
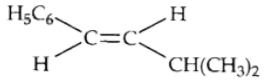
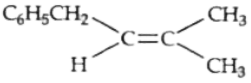
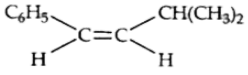
31. The main product of the following reaction is

$$C_6H_5CH_2CH(OH)CH(CH_3)_2 \xrightarrow{\text{Conc.}H_2SO_4}$$

A. 

B. 

C. 

D. 

Answer: B

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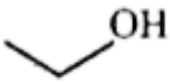
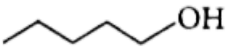
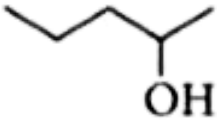
32. Which of the following exhibit highest B.P.?

A. 

B. 

C. 

D. 

Answer: B

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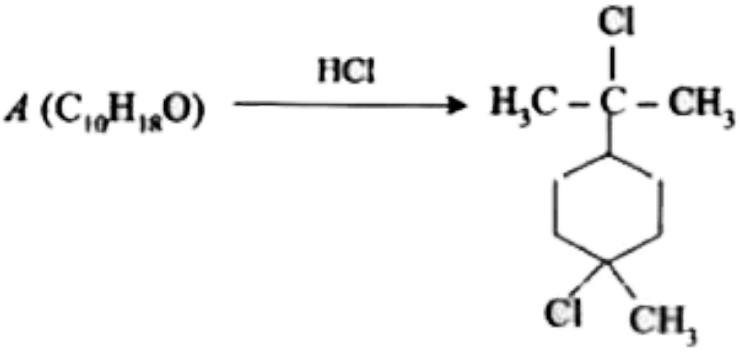
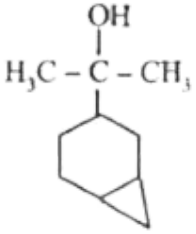


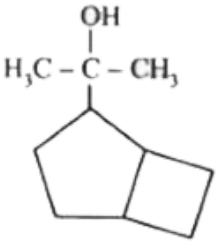
33.

Degree of unsaturation of A = 2, it contains no double or triple bonds. A is

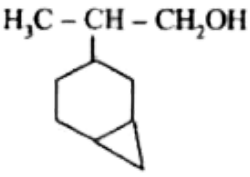
A.



B.



C.



D. none of these

Answer: A

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34. $(CH_3)_3C-OH$ on treatment with NaCl in aqueous medium gives

A. no reaction

B. $(CH_3)_3C^-Na^+$

C. $(CH_3)_3C^+Cl^-$

D. isobutylene.

Answer: A

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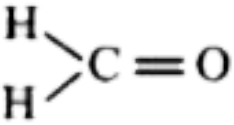
35. $HOCH_2 \cdot CH_2OH$ on heating with periodic acid gives

A. HCOOH

B. 

C. 

D. CO_2

Answer: C

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36. Which of the following compounds has the strongest hydrogen bonding?

A. Propan-1-ol

B. Propan-2-ol

C. Propane-1,2-diol

D. Propane-1,2,3-triol

Answer: D

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37. During dehydration of alcohols to alkenes by heating with concentrated H_2SO_4 the initiation step is

A. protonation of alcohol molecule

B. formation of carbocation

C. elimination of water

D. formation of an ester

Answer: A

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38. Propene, $CH_3CH = CH_2$ can be converted into propan-1-ol by oxidation. Indicate which set of reagents amongst the following is ideal for the above conversion?

A. $KMnO_4$ (alkaline)

B. Osmium tetroxide (OsO_4 / CH_2Cl_2)

C. B_2H_6 and alk.H_2O_2

D. O_3 / Zn

Answer: C

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39. How many isomers of $C_5H_{11}OH$ will be primary alcohols?

A. 5

B. 4

C. 2

D. 3

Answer: B

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40. When 3,3-dimethyl-2-butanol is heated with H_2SO_4, the major product obtained is

A. 2,3-dimethyl-2-butene

B. cis and trans isomers of 2,3-dimethyl-2-butene

C. 2,3-dimethyl-1-butene

D. 3,3-dimethyl-1-butene

Answer: A

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41. The enzyme which can catalyse the conversion of glucose to ethanol is

A. zymase

B. invertase

C. maltase

D. diastase

Answer: A

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42. Which of the following can work as a dehydrating agent for alcohols?

A. H_2SO_4

B. Al_2O_3

C. P_2O_5

D. All of these

Answer: D

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43. In reaction of alcohols with alkali metal, which of the following alcohols will react faster?

A. Secondary

B. Tertiary

C. Primary

D. All equally

Answer: C

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44. Which of the following statements is correct regarding ease of dehydration?

A. Primary $>$ Secondary

B. Secondary $>$ Tertiary

C. Tertiary $>$ Primary

D. None of these

Answer: C

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45. Which of the following isomers of butanol has a chiral structure?

A. $(CH_3)_3COH$

B. $(CH_3)_2CHCH_2OH$

C. $CH_3CH(OH)CH_2CH_3$

D. $CH_3(CH_2)_3OH$

Answer: C

View Text Solution

46. $R-OH-HX \rightarrow RX+H_2O$

In the above reaction, the reactivity of alcohols is

A. tertiary $>$ secondary $>$ primary

B. tertiary $<$ secondary $<$ primary

C. tertiary $>$ primary $>$ secondary

D. secondary $>$ primary $>$ tertiary.

Answer: A

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47. An organic compound (A) reacts with sodium metal and forms (B). On heating with conc. H_2SO_4, (A) gives diethyl ether. (A) and (B) are respectively

A. C_2H_5OH and C_2H_5ONa

B. C_3H_7OH and CH_3ONa

C. CH_3OH and CH_3ONa

D. C_4H_9OH and C_4H_9ONa

Answer: A

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48. What is the product obtained when chlorine reacts with ethyl alcohol in the presence of NaOH?

A. CH_3Cl

B. C_2H_5Cl

C. $CCl_3 \cdot CHO$

D. $CHCl_3$

Answer: D

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49. Which of the following alcohols is used in beverages?

A. Propanol

B. 2-Butanol

C. Methanol

D. Ethanol

Answer: D

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50. 3 Moles of ethanol react with one mole of phosphorus tribromide to form 3 moles of bromoethane and one mole of X. Which of the following is X?

A. H_3PO_4

B. H_3PO_2

C. HPO_3

D. H_3PO_3

Answer: D

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51. The products of combustion of an aliphatic thiol (RSH) at 298 K are

A. $CO_{2(g)}$, $H_2O_{(g)}$ and $SO_{2(g)}$

B. $CO_{2(g)}$, $H_2O_{(l)}$ and $SO_{2(g)}$

C. $CO_{2(l)}$, $H_2O_{(l)}$ and $SO_{2(g)}$

D. $CO_{2(g)}$, $H_2O_{(l)}$ and $SO_{2(l)}$

Answer: B

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52. 23 g of Na will react with ethanol to give

A. one mole of oxygen

B. one mole of H_2

C. $\frac{1}{2}$ Mole of H_2

D. none of these

Answer: C

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53. Alcohols of low molecular weight are

A. soluble in water

B. soluble in water on heating

C. insoluble in water

D. insoluble in all solvents.

Answer: A

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54. When primary alcohol is oxidised with Cl_2, it gives

A. CH_3CHO

B. CH_3COCH_2

C. CH_3COCl

D. $COCl_2$

Answer: A

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55. Which of the following is the most suitable method for removing the traces of water from ethanol?

A. Reacting with Na metal

B. Passing dry HCl through it

C. Distilling it

D. Reacting with Mg

Answer: D

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56. A compound is soluble in conc. H_2SO_4. It does not decolourise bromine in CCl_4 but is oxidised by chromic anyhydride in aqueous sulphuric acid within two seconds,

turning orange solution to blue green, then opaque. The original solution contains

A. a secondary alcohol

B. an alkene

C. an ether

D. a primary alcohol.

Answer: D

View Text Solution

57. $(CH_3)_2CHOH \xrightarrow{\text{Mild oxid.}} X \xrightarrow[(ii)\,HOH]{(i)\,CH_3MgBr} Y$ Here Y is

A. iso-butyl alcohol

B. tert-butyl alcohol

C. iso-butylene

D. sec-butyl alcohol

Answer: B

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58. Identify Z in the series.

$$C_3H_7OH \xrightarrow{\text{conc.}H_2SO_4} X \xrightarrow{Br_2} Y \xrightarrow{\text{excess of alc.}KOH} Z$$

A. $CH_3 - \underset{\underset{NH_2}{|}}{CH} - \underset{\underset{NH_2}{|}}{CH}$

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

C. $CH_3 - \underset{\underset{OH}{|}}{C} = CH_2$

D. $CH_3 - C \equiv CH$

Answer: D

View Text Solution

59. When vapours of an alcohol are passed over hot reduced copper, alcohol is converted into alkene, the alcohol is

A. primary

B. secondary

C. tertiary

D. none of these

Answer: C

View Text Solution

60. Alkene $R-CH=CH_2$ reacts with B_2H_6 in the presence of H_2O_2 to give

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

B. $R-\underset{\underset{OH}{|}}{CH}-\underset{\underset{OH}{|}}{CH_2}$

C. $R-CH_2-CHO$

D. $R-CH_2-CH_2-OH$

Answer: D

View Text Solution

61. $R-CH_2-CH_2-OH$ can be converted into RCH_2CH_2COOH by the following sequence of steps

A. PBr_3, KCN, H_3O^+

B. $PBr_3, KCN, H_2/Pt$

C. KCN, H_3O^+

D. HCN, PBr_3, H_3O^+

Answer: A

View Text Solution

62. The most reactive nucleophile among the following is

A. CH_3O^-

B. $C_6H_5O^-$

C. $(CH_3)_2CHO^-$

D. $(CH_3)_3CO^-$

Answer: A

View Text Solution

63. Final product formed on reduction of glycerol by periodic acid is

A. propane

B. propanoic acid

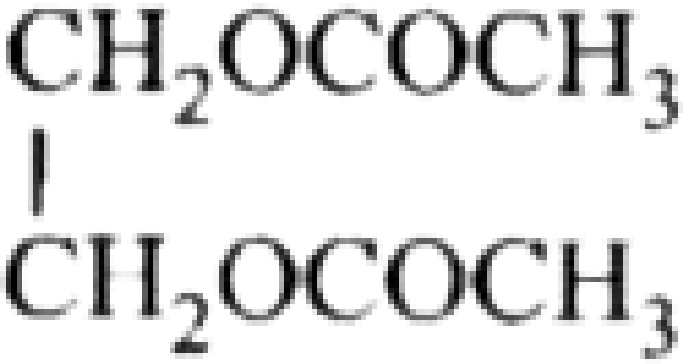
C. propene

D. none of these.

Answer: D

View Text Solution

64. The product



is obtained by the reaction of

A. acetone and glycol

B. ethanal and ethanol

C. glycol and CH_3COCl

D. glycerol and $(CH_3CO)_2O$

Answer: C

View Text Solution

65. Dehydration of glycerol gives

A. propane

B. propene

C. acrolein

D. benzene

Answer: C

View Text Solution

66. Mild oxidation of glycerol with $H_2O_2 / FeSO_4$ gives

A. glyceraldehyde

B. dihydroxy acetone

C. both of these

D. none of these

Answer: C

View Text Solution

67. Which of the following reagents will convert glycerol to acrolein?

A. P_2O_5

B. Conc. H_2SO_4

C. $KHSO_4$

D. All of these

Answer: D

View Text Solution

68. In glycerine,

A. one primary -OH group is present

B. one tertiary -OH group is present

C. two secondary -OH groups are present

D. one secondary -OH group is present.

Answer: D

View Text Solution

69. The boiling point of glycerol is more than propanal because of

A. hybridisation

B. H-bonding

C. resonance

D. all of these

Answer: B

View Text Solution

70. The wrong statement about glycerol is

A. it is a trihydric alcohol

B. acidified $KMnO_4$ converts it to oxalic acid

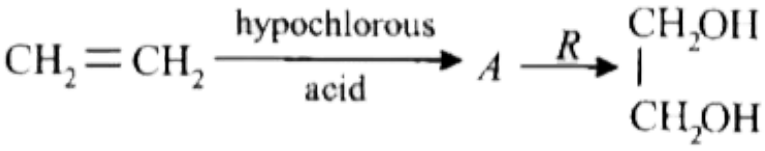
C. used in the manufacture of explosives

D. it is a tertiary alcohol.

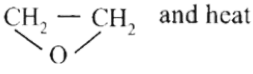
Answer: D

View Text Solution

71. In the reaction sequence,



A and R respectively are

A. 

B. CH_3CH_2Cl and $NaOH$

C. CH_3CH_2OH and H_2SO_4

D. CH_2ClCH_2OH and $NaHCO_3$

Answer: D

View Text Solution

72. To prepare 3-ethylpentan-3-ol, the reagents needed are

A. $CH_3CH_2MgBr + CH_3COCH_2CH_3$

B. $CH_3MgBr + CH_3CH_2CH_2COCH_2CH_3$

C. $CH_3CH_2MgBr + CH_3CH_2COCH_2CH_3$

D. $CH_3CH_2CH_2MgBr + CH_3COCH_2CH_3$

Answer: C

View Text Solution

73. When ethylene glycol is heated with acidified potassium permanganate, the main organic compound obtained is

A. oxalic acid

B. glyoxal

C. formic acid

D. acetaldehyde

Answer: C

View Text Solution

74. An organic compound A reacts with methyl magnesium iodide to form an addition product which on hydrolysis forms the compound B. Compound B gives blue colour salt in Victor Meyer's test. The compounds A and B respectively are

A. acetaldehyde, t-butyl alcohol

B. acetaldehyde, ethyl alcohol

C. acetaldehyde, iso-propyl alcohol

D. acetone, iso-propyl alcohol

Answer: C

View Text Solution

75. Glycol is added to aviation petrol because

A. it prevents freezing of petrol

B. it minimises the loss of petrol

C. it increases the efficiency of fuel

D. it prevents the engine from heating up.

Answer: A

View Text Solution

76. Which of the following combinations can be used to synthesize iso-propyl alcohol?

A. CH_3MgI and CH_3COCH_3

B. CH_3MgI and C_2H_5OH

C. CH_3MgI and $CH_3COOC_2H_5$

D. CH_3MgI and $HCOOC_2H_5$

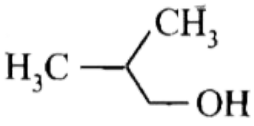
Answer: D

View Text Solution

77. Among the following the one that gives positive iodoform test upon reaction with I_2 and NaOH is

A. $CH_3CH_2CH(OH)CH_2CH_3$

B. $C_6H_5CH_2CH_2OH$

C. 

D. $PhCHOHCH_3$

Answer: D

View Text Solution

78. Identify the final product.

$$CH_2 = CH_2 \xrightarrow{O_2, Ag} X \xrightarrow{473K} Y$$

A. Ethanol

B. Ethanal

C. Epoxy ethane

D. Ethylene glycol

Answer: D

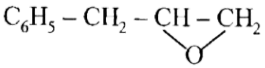
View Text Solution

79. The major product obtained when 3-phenyl-1,2-propane-diol is heated with H_2SO_4 is

A. $C_6H_5 - CH_2 - CO - CH_3$

B. $C_6H_5 - CH_2 - CH_2 - CHO$

C. $C_6H_5 - CH_2 - CH = CH_2$

D. 

Answer: D

View Text Solution

80. Rectified spirit is denatured by adding

A. methyl alcohol and formic acid

B. methyl alcohol and benzene

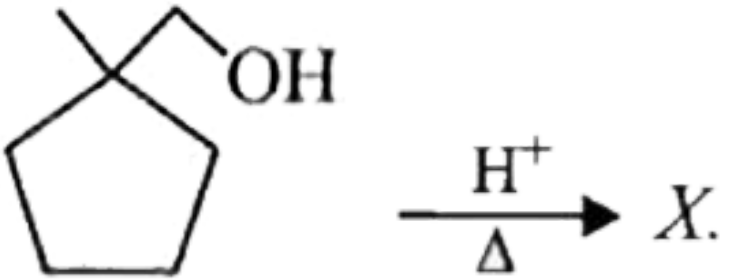
C. methyl alcohol and pyridine

D. methyl alcohol and acetic acid.

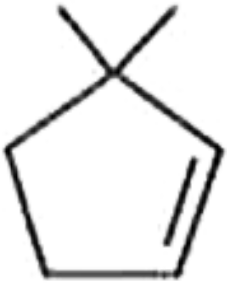
Answer: C

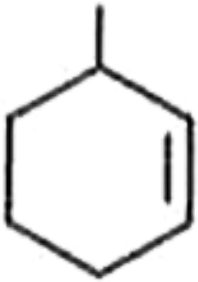
View Text Solution

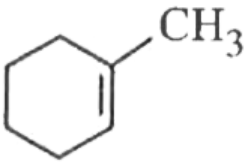
81. The product of the reaction

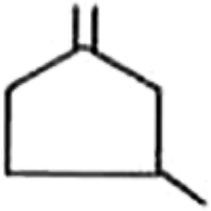


. X is

A. 

B. 

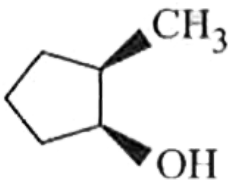
C. 

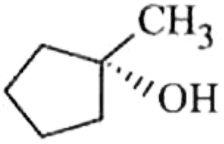
D. 

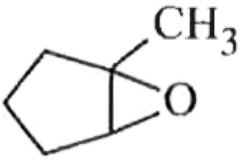
Answer: C

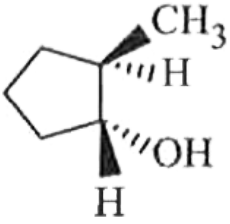
View Text Solution

82. The major product formed during hydroboration oxidation of 1-methylcyclopentene is

A. 

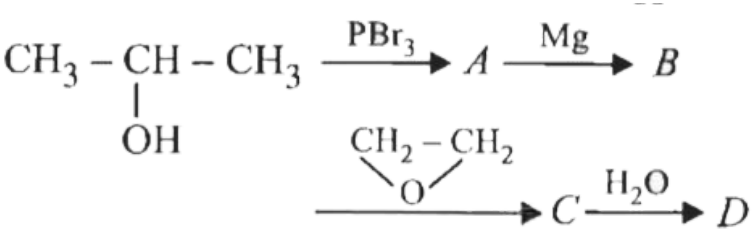
B. 

C. 

D. 

Answer: D

View Text Solution

83. 

Here D is

A. $CH_3 - \underset{\underset{CH_3}{|}}{CH} - OCH_2 - CH_3$

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

C. $CH_3 - \underset{\underset{CH_3}{|}}{CH} - CH_2 - CH_2OH$

D. $CH_3 - CH_2 - \underset{\underset{CH_3}{|}}{CH} - CH_2OH$

Answer: C

View Text Solution

84. Orbital of oxygen in alcohols involved in bonding with carbon is

A. sp hybridized

B. sp^2 hybridized

C. sp^3 hybridized

D. dsp^2 hybridized.

Answer: C

View Text Solution

85. Bond angle in alcohols is slightly less than the tetrahedral angle because of

A. electronegativity of oxygen

B. H-bonding

C. repulsion between the unshared electron pairs of oxygen

D. none of these.

Answer: C

View Text Solution

86. X is obtained commercially by fermentation with the help of enzyme zymase. X is a colourless liquid and nowadays it is obtained by hydrolysis of ethene. X is

A. ethanol

B. acetaldehyde

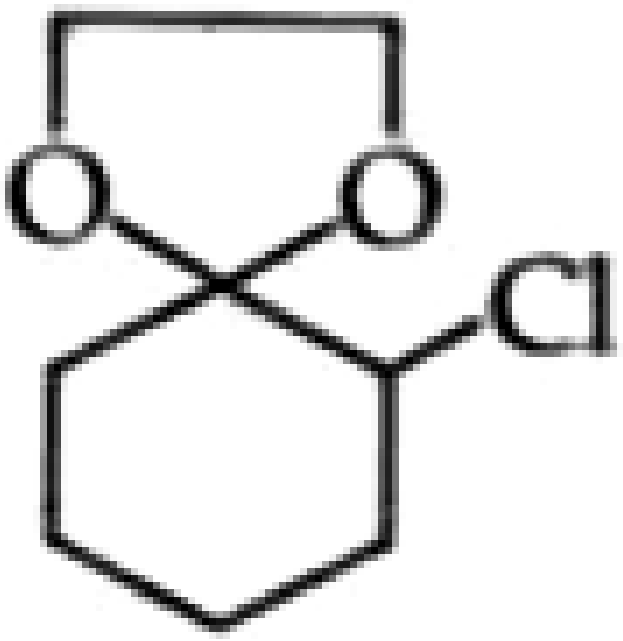
C. ethane

D. ethanoic acid.

Answer: A

View Text Solution

87. Acid catalysed hydrolysis of the cyclic acetal gives



A. ethanal and 2-chlorocyclohexanol

B. ethanol and 2-chlorocyclohexanol

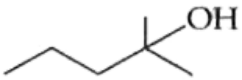
C. 1,2-ethanediol and 2-chlorocyclohexanone

D. 1,2-ethanediol and 2-chlorocyclohexanol.

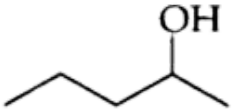
Answer: C

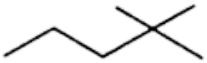
View Text Solution

88. The end product of the following sequence of reactions

A. 

B. 

C. 

D. 

Answer: A

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89. Which of the following reactions would convert 2-butanol into deuterated compound $CH_3 - CH_2 - \underset{\underset{D}{|}}{CH} - CH_3$?

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

90. Benzene reacts with 2-methyloxirane in the presence of anhy. $AlCl_3$. It gives a product of molecular formula $C_9H_{12}O$. Identify the product.

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

91. Which of the following synthesis gives 3-methyl-1-hexanol?

A. 

B. 

C. 

D. 

Answer: B

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92. The order of reactivity of the following alcohols towards conc. HCl is

A. $I > II > III > IV$

B. $I > III > II > IV$

C. $IV > III > II > I$

D. $IV > III > I > II$

Answer: C

View Text Solution

93. Glycerol $\xrightarrow{HCl} P \xrightarrow{[O]} Q \xrightarrow{HCN} R \xrightarrow{KCN\,(alc.)} S \xrightarrow{H_2O/H^+} T$

'T' is

A. citric acid

B. ascorbic acid

C. tartaric acid

D. saccharic acid.

Answer: A

View Text Solution

94. Oxidation of allyl alcohol, $(CH_2 = CH - CH_2OH)$ gives a mixture of oxalic acid and formic acid. If this oxidation is done in presence of bromine. One would expect only

A. oxalic acid

B. formic acid

C. succinic acid

D. acrylic acid.

Answer: D

View Text Solution

95. Tert-butyl alcohol is heated with conc. H_2SO_4 to get an alkene which is subjected to ozonolysis. The products thus formed are further treated with $LiAlH_4$. The final products are

A. tert-butyl alcohol

B. mixture of ethanol and methanol

C. mixture of propan-2-ol and methanol

D. mixture of propanone and formic acid.

Answer: C

View Text Solution

96. A compound $C_9H_{12}O$ (A), is oxidised under vigorous conditions to benzoic acid. (A) reacts with CrO_3 and gives a positive iodoform test. Mark out the incorrect statement about the compound (A).

A. The compound is a benzylic alcohol.

B. The compound is a 2° alcohol.

C. The compound is chiral.

D. The compound does not give violet colour on treatment with $FeCl_3$.

Answer: A

View Text Solution

97. Dehydration of alcohol is an example of which type of reaction?

A. Substitution

B. Elimination

C. Addition

D. Rearrangement

Answer: B

View Text Solution

98. On heating 2,2-dimethylcyclohexanol with conc. H_2SO_4, an alkene is formed. The major product of the above dehydration is

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

99. Which of the following reactions is correct?

A. $2ROH + 2M \rightarrow 2RO^- M^+ + H_2 \uparrow$

B. $2ROH + 2M \rightarrow 2R + O^- M^+$

C. $2R^-OM^+ + 2M \rightarrow 2ROM_2 + O^-M^+$

D. $2ROH + HM \rightarrow RO^-M^+ + H_2 \uparrow$

Answer: A

View Text Solution

100. Product

The main product is

A.

B.

C.

D.

Answer: B

View Text Solution

101. Which statement is not correct about alcohol?

A. Alcohol of less no. of carbon atoms is less soluble in water than alcohol of high no. of carbon atoms.

B. Alcohol is lighter than water.

C. Alcohol evaporates quickly

D. All of these.

Answer: A

View Text Solution

102. Which is most viscous?

A. CH_3OH

B. C_2H_5OH

C. 

D. None of these

Answer: C

View Text Solution

103. Rectified spirit has ethanol

A. 0.05

B. 0.95

C. 1

D. 0.8

Answer: B

View Text Solution

104. Excess of ethanol when heated with concentrated H_2SO_4 at $140^\circ C$, the compound obtained is

A. ethene

B. ethyl hydrogen sulphate

C. ethoxy ethane

D. diethyl sulphate.

Answer: C

View Text Solution

105. When ethyl alcohol is heated at $110^{\circ} C$ with sulphuric acid, the product formed is

A. ethyl hydrogen sulphate

B. diethyl ether

C. ethane

D. ethanoyl sulphate.

Answer: A

View Text Solution

106. When alcohol reacts with concentrated H_2SO_4 intermediate compound formed is

A. carbonium ion

B. alkoxy ion

C. alkyl hydrogen sulphate

D. none of these.

Answer: A

View Text Solution

107. Ethyl alcohol exhibits acidic character on reacting with

A. hydrogen iodide

B. acetic acid

C. sodium metal

D. all of these.

Answer: C

View Text Solution

108. Which one of the following can differentiate between C_2H_5OH and CH_3OH?

A. H_2O

B. HCl

C. $I_2 + KOH$

D. NH_3

Answer: C

View Text Solution

109. Among the following the most stable compound is

A. cis-1,2-cyclohexanediol

B. trans-1,2-cyclohexanediol

C. cis-1,3-cyclohexenediol

D. trans-1,3-cyclohexanediol

Answer: D

View Text Solution

110. Which one of the following is a trihydric alcohol containing only secondary hydroxyl groups?

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

111. A primary alcohol, C_3H_8O (A) on heating with sulphuric acid undergo dehydration to give an alkene, B. B when reacted with HCl gave C, which on treatment with aqueous KOH gives compound D, C_3H_8O. A and D are

A. functional isomers

B. position isomers

C. chain isomers

D. stereo isomers

Answer: B

View Text Solution

112. Which of the following will not give CHI_3, on treatment with I_2, and NaOH?

A. $CH_3 - OH$

B. $CH_3 - CH_2 - OH$

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

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

Answer: A

View Text Solution

113. Primary alcohols can be prepared by the reaction of RMgX with

A. C_2H_5CHO

B. CH_3CHO

C. HCHO

D. C_3H_7CHO

Answer: C

View Text Solution

114. n-Propyl alcohol and isopropyl alcohol are the examples of

A. position isomerism

B. chain isomerism

C. tautomerism

D. geometrical isomerism

Answer: A

View Text Solution

115. Glycerol on treatment with oxalic acid gives

A. acrolein

B. glycerose

C. formic acid and allyl alcohol

D. allyl alcohol and glycol

Answer: C

View Text Solution

116. The structure of the compound that gives a tribromo derivative on treatment with bromine water is

A. 

B. 

C. 

D. 

Answer: A

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117. 

The electrophile involved in the above reaction is

A. dichloromethyl cation $\left(\overset{\oplus}{C}HCl_2\right)$

B. dichlorocarbene $(:CCl_2)$

C. trichloromethyl anion .

D. formyl cation $\left(\overset{\oplus}{C}HO\right)$.

Answer: B

View Text Solution

118. The major product obtained on interaction of phenol with sodium hydroxide and carbon dioxide is

A. benzoic acid

B. salicylaldehyde

C. salicylic acid

D. phthalic acid

Answer: C

View Text Solution

119. Dow's reaction involves

A. electrophilic addition

B. electrophilic substitution

C. nucleophilic addition

D. nucleophilic substitution.

Answer: D

View Text Solution

120. $\text{o-Xylene} \xrightarrow[\Delta]{HNO_3} X \xrightarrow[H_2SO_4]{\text{Phenol}} Y.$

The product Y is

A. phthalic acid

B. isophthalic acid

C. phenolphthalein

D. o-hydroxysulphonic acid

Answer: C

View Text Solution

121. Identify the product 'X' in the following reaction.

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

122. m-Cresol on bromination gives

A. 

B. 

C. 

D. 

Answer: D

View Text Solution

123. Which of the following reagents can be used to distinguish a phenol and an alcohol?

A. Ammoniacal $AgNO_3$

B. Ammoniacal Cu_2Cl_3

C. Aqueous ferric chloride

D. Neutral ferric chloride

Answer: D

View Text Solution

124. Which one of the following compounds will be most readily attacked by an electrophile?

A. Chlorobenzene

B. Benzene

C. Phenol

D. Toluene

Answer: C

View Text Solution

125. In phenols

A. $-OH$ group is attached to side chain

B. $-OH$ group is directly attached to benzene nucleus

C. both (a) and (b)

D. none of these

Answer: B

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126. Which concept best explains that o-nitrophenol is more volatile than p-nitrophenol?

A. Resonance

B. Hydrogen bonding

C. Hyperconjugation

D. Steric hindrance

Answer: B

View Text Solution

127. Between p-nitrophenol and salicylaldehyde, solubility in base is

A. almost nil for both cases

B. higher for p-nitrophenol

C. higher for salicylaldehyde

D. equal in nature.

Answer: B

View Text Solution

128. Which represents Reimer-Tiemann reaction?

A. 

B. 

C. 

D. 

Answer: A

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129. Among acetic acid, phenol and n-hexanol, which of the compound(s) will react with $NaHCO_3$ solution to give sodium salt and CO_2?

A. Acetic acid and phenol

B. Acetic acid

C. Phenol

D. n-Hexanol

Answer: B

View Text Solution

130. Phenol on oxidation gives chloranil. The oxidant used is

A. $K_2S_2O_8$

B. $KMnO_4$

C. $KClO_3 + HCl$

D. none of these

Answer: C

View Text Solution

131. 

The product X in the reaction is

A. 

B. 

C. 

D. 

Answer: D

View Text Solution

132. Which of the following statements regarding phenols is not correct?

A. Phenols are stronger acids than water and alcohols.

B. Phenols are weaker acids than carboxylic acids.

C. Phenols are soluble in both aqueous NaOH and aqueous $NaHCO_3$.

D. Phenoxide ions are more stable than the corresponding phenols.

Answer: C

View Text Solution

133. In the reaction,

The compounds A, B and C are the following

A. benzene, nitrobenzene and aniline

B. benzene, dinitrobenzene and m-toluidine

C. toluene, nitrobenzene and m-toluidine

D. benzene, nitrobenzene and hydrazobenzene.

Answer: D

View Text Solution

134. 

Identify Y.

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

135. Acidic character of phenol is due to

A. resonance of phenoxide ion

B. tautomerism occurring in phenol

C. the fact that the electronegativity of oxygen is more than that of hydrogen

D. none of the above.

Answer: A

View Text Solution

136. Salicylic acid as compared to benzoic acid

A. is more acidic

B. has same acidity

C. has less acidity

D. none of these.

Answer: A

View Text Solution

137. Phenol on sulphonation gives

A. o-phenolsulphonic acid

B. p-phenolsulphonic acid

C. m-phenolsulphonic acid

D. mixture of o- and p-phenolsulphonic acids.

Answer: D

View Text Solution

138. Which of the following has highest boiling point?

A. Benzene

B. Phenol

C. Toluene

D. Ethyl benzene

Answer: B

View Text Solution

139. When phenol is treated with PCl_5, the yield of chlorobenzene is generally poor because of the formation of

A. benzoyl chloride

B. p-chlorophenol

C. o-chlorophenol

D. triphenyl phosphate

Answer: D

View Text Solution

140. Salicylic acid on heating with sodalime forms

A. phenol

B. benzyl alcohol

C. benzene

D. benzoic acid

Answer: A

View Text Solution

141. Picric acid and benzoic acid can be distinguished by

A. aqueous $NaHCO_3$

B. aqueous NaOH

C. aqueous $FeCl_3$

D. aqueous Na_2CO_3

Answer: C

View Text Solution

142. Phenol is less soluble in water. It is due to

A. non-polar nature of phenol

B. acidic nature of -OH group

C. non-polar hydrocarbon part in it

D. none of these.

Answer: C

View Text Solution

143. Which of the following is soluble in dilute aqueous NaOH?

A. C_6H_5OH

B. C_6H_6

C. C_2H_5OH

D. $C_6H_5CH_2OH$

Answer: A

View Text Solution

144. One of the following statements regarding Reimer-Tiemann reaction is false.

A. Reaction of phenol with $CHCl_3$ and KOH.

B. CCl_2 acts as a nucleophile.

C. Reaction of phenol with CCl_4 and $NaOH$

D. Reaction of phenol with formaldehyde to form bakelite.

Answer: D

View Text Solution

145. Which one of the following compounds is most acidic?

A. CH_2ClCH_2OH

B. 

C. 

D. 

Answer: C

View Text Solution

146. The product X is

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

147. Which of the following will not be soluble in sodium carbonate solution?

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

148. The most unlikely representation of resonance structures of p-nitrophenoxide ion is

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

149. p-Cresol reacts with chloroform in alkaline medium to give compound (A) which add hydrogen cyanide to form compound (B). The latter on acidic hydrolysis gives chiral carboxylic acid. The acid is

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

150. Benzenediazonium chloride on reaction with phenol in weakly basic medium gives

A. diphenyl ether

B. p-hydroxyazobenzene

C. chlorobenzene

D. benzene

Answer: B

View Text Solution

151. Phenol, when it first reacts with concentrated sulphuric acid and then with concentrated nitric acid, gives

A. nitrobenzene

B. 2, 4, 6-trinitrobenzene

C. o-nitrophenol

D. picric acid

Answer: D

View Text Solution

152. Increasing order of acid strength among p-methoxyphenol, p-methylphenol and p-nitrophenol is

A. p-nitrophenol, p-methoxyphenol, p-methylphenol

B. p-methylphenol, p-methoxyphenol, p-nitrophenol

C. p-nitrophenol, p-methylphenol, p-methoxyphenol

D. p-methoxyphenol, p-methylphenol, p-nitrophenol.

Answer: D

View Text Solution

153. Phenol gives tribromophenol when treated with bromine in aqueous solution but only o - and p-bromophenols in CCl_4, solution because

A. in aqueous solution the bromine is ionised.

B. in aqueous solution, phenol exists in equilibrium with phenoxide ion which has more activating effect.

C. In CCl_4, the electrophilicity of Br_2 increases.

D. In CCl_4, the other positions of benzene rings are blocked by the solvent.

Answer: B

View Text Solution

154. 0.24 mole of phenol was treated with excess of bromine in presence of water. All the phenol got quantitatively converted to bromophenol. The number of moles of Br_2 reacted were

A. 0.24

B. 0.36

C. 0.72

D. 0.48

Answer: C

View Text Solution

155. Phenol reacts with Br_2 in CCl_4 at low temperature to give

A. m-bromophenol

B. o-and p-bromophenol

C. p-bromophenol

D. 2,4,6-tribromophenol

Answer: B

View Text Solution

156. Acetylation reaction of phenol gives

A. sodium salicylate

B. phenyl acetate

C. phenyl chloride

D. sodium phenoxide

Answer: B

View Text Solution

157. A phenolic compound which is a constituent of several mouthwashes, deodorant soaps and medicinal skin cleansers is

A. salicylic acid

B. hexachlorophene

C. phenol

D. salol

Answer: B

View Text Solution

158. Which product is obtained by Kolbe-Schmidt reaction?

A. Salicylaldehyde

B. Cinnamic acid

C. Salicylic acid

D. Phenetole

Answer: C

View Text Solution

159. Reaction of phenol with CCl_4, and NaOH followed by hydrolysis is likely to give

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

160. Electrophilic substitution in phenol takes place at

A. ortho position

B. meta position

C. para position

D. both (a) and (c)

Answer: D

View Text Solution

161. A common material used in the preparation of aspirin, plastic and picric acid is

A. methane

B. formic acid

C. phenol

D. alcohol

Answer: C

View Text Solution

162. An organic compound of molecular formula C_3H_6O does not produce any precipitate with 2,4-dinitrophenyl hydrazine and does not react with sodium metal. This compound is

A. CH_3COCH_3

B. $CH_2 = CH - OCH_3$

C. CH_3CH_2CHO

D. $CH_2 = CHCH_2OH$

Answer: B

View Text Solution

163. In the reaction,  the products are

A. 

B. 

C. 

D. 

Answer: D

View Text Solution

164. The ether that undergoes electrophilic substitution reactions is

A. $CH_3OC_2H_5$

B. $C_6H_5OCH_3$

C. CH_3OCH_3

D. $C_2H_5OC_2H_5$

Answer: B

View Text Solution

165. Identify Z in the sequence.

$$CH_3CH_2CH = CH_2 \xrightarrow{HBr/H_2O_2} Y \xrightarrow{C_2H_5ONa} Z$$

A. $(CH_3)_2CHOCH_2CH_3$

B. $CH_3CH_2CH(CH_3) - O - CH_2CH_3$

C. $CH_3(CH_2)_3 - O - CH_2CH_3$

D. $CH_3(CH_2)_4 - O - CH_3$

Answer: C

View Text Solution

166. HBr reacts with $CH_2 = CH - OCH_3$ under anhydrous conditions at room temperature to give

A. CH_3CHO and CH_3Br

B. $BrCH_2CHO$ and CH_3OH

C. $BrCH_2 - CH_2 - OCH_3$

D. $H_3C - CHBr - OCH_3$

Answer: D

View Text Solution

167. Acetic anhydride reacts with diethyl ether in the presence of anhydrous $AlCl_3$ to give

A. CH_3COOCH_3

B. $CH_3CH_2COOCH_3$

C. $CH_3COOCH_2CH_3$

D. CH_3CH_2OH

Answer: C

View Text Solution

168. When diethyl ether is treated with excess of Cl_2 in the presence of sunlight, the product formed is

A. $CH_3CHCl - O - CH_2CH_3$

B. $CH_3CHCl - O - CHClCH_3$

C. $CCl_3CCl_2 - O - CCl_2CCl_3$

D. $CH_3CCl_2 - O - CHClCH_3$

Answer: C

View Text Solution

169. An organic compound of molecular formula $C_4H_{10}O$ does not react with sodium. With excess of HI, it gives only two types of alkyl halide. The compound is

A. ethoxyethane

B. 2-methylpropan-2-ol

C. 1-methoxypropane

D. 1-butanol

Answer: C

View Text Solution

170. An aromatic ether is not cleaved by HI even at 525 K. The compound is

A. $C_6H_5OCH_3$

B. $C_6H_5O - C_6H_4(CH_3)$

C. $C_6H_5OC_3H_7$

D. Tetrahydrofuran.

Answer: B

View Text Solution

171. In the following reaction,

$$C_2H_5OC_2H_5 + 4[H] \xrightarrow{\text{Red}P + HI} 2X + H_2O$$

X is

A. ethane

B. ethylene

C. butane

D. propane

Answer: A

View Text Solution

172. In the reaction 

The major product A is

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

173. tert-Butyl methyl ether on heating with HI gives a mixture of

A. tert-butyl alcohol and methyl iodide

B. tert-butyl iodide and methanol

C. iso-butylene and methyl iodide

D. iso-butylene and methanol

Answer: B

View Text Solution

174. Increasing order of reactivity of the following alkyl halides in the Williamson's synthesis is

I. $CH_2 = CHCH_2Cl$

II. $CH_3CH_2CH_2Br$

III. $(CH_3)_3CCH_2Br$

IV. $CH_3CH_2CH_2Cl$

A. $II < III < IV < I$

B. $III < II < IV < I$

C. $IV < III < I < II$

D. $III < IV < II < I$

Answer: D

View Text Solution

175. Which of the following is best method to prepare phenyl-t-butyl ether?

A. $(CH_3)_3C - O^- Na^+ + C_6H_5Br$

B. $C_6H_5ONa + (CH_3)_3CCl$

C. $(CH_3)_2C = CH_2 \xrightarrow[C_6H_5OH]{Hg(OCOCH_3)_2} \xrightarrow{NaBH_4}$

D. None of these

Answer: C

View Text Solution

176. On boiling with concentrated HBr, phenyl ethyl ether will give

A. phenol and ethyl bromide

B. bromobenzene and ethanol

C. phenol and ethane

D. bromobenzene and ethane

Answer: A

View Text Solution

177. In Williamson's synthesis, ethoxyethane is prepared by

A. passing ethanol over alumina

B. heating ethanol with dry Ag_2O

C. heating sodium ethoxide with ethyl bromide

D. treating ethyl alcohol with excess of H_2SO_4 at 443K

Answer: C

View Text Solution

178. The acidic hydrolysis of ether (X) shown below is fastest when

A. one phenyl group is replaced by a methyl group

B. one phenyl group is replaced by a para methoxyphenyl group

C. two phenyl groups are replaced by two para methoxyphenyl groups

D. no structural change is made to X.

Answer: C

View Text Solution

179. The number of ether metamers represented by molecular formula $C_4H_{10}O$ is

A. 4

B. 3

C. 2

D. 1

Answer: B

View Text Solution

180. An ether is more volatile than an alcohol having the same molecular formula. This is due to

A. dipolar character of ethers

B. alcohols having resonance structures

C. intermolecular hydrogen bonding in ethers

D. intermolecular hydrogen bonding in alcohols.

Answer: D

View Text Solution

181. Which of the following statements about ether is incorrect?

A. It is non-polar

B. It is miscible with water

C. Low boiling point compound

D. Soluble in organic solvents

Answer: A

View Text Solution

182. Which one of the following set of reaction gives ether as a main product?

A. Isopropyl bromide and sodium methoxide

B. Ethyl bromide and sodium tertiary butoxide

C. Tertiary butyl bromide and sodium isopropoxide

D. Bromobenzene and sodium phenoxide

Answer: B

View Text Solution

183. Which one of the following ethers cannot be prepared by Williamson's synthesis?

A. Diphenyl ether

B. Diethyl ether

C. Phenyl ethyl ether

D. Tertiary butyl ether

Answer: A

View Text Solution

184. Which one of the following is not cleaved by HI?

A. Divinyl ether

B. Diethyl ether

C. Methyl ethyl ether

D. Phenetole

Answer: A

View Text Solution

185. Allyl phenyl ether can be prepared by

A. $CH_2 = CH - CH_2 - ONa + C_6H_5CH_2 - Br$

B. $C_6H_5 - CH = CH - Br + CH_3 - ONa$

C. $CH_2 = CH - ONa + C_6H_5Br$

D. $CH_2 = CH - CH_2 - Br + C_6H_5ONa$

Answer: D

View Text Solution

186. Which of the following product is obtained in the following reaction?

A. 

B. 

C. 

D. No reaction

Answer: C

View Text Solution

187. In the reaction,

$$CH_3\underset{\underset{Br}{|}}{C}HCH_3 \xrightarrow[KOH]{alc.} A \xrightarrow[\text{Peroxide}]{HBr} B \xrightarrow{CH_3ONa} C$$

C is

A. diethyl ether

B. 1-methoxy propane

C. isopropyl alcohol

D. propylene glycol.

Answer: B

View Text Solution

188.  , here A is

A. 

B. 

C. 

D. 

Answer: D

View Text Solution

189. In water $H-O-H$ bond angle is 104.5°, but in ethers $(R-O-R)$ the $C-O-C$ bond angle is about 110°. The reason to justify it is

A. positive inductive effect of alkyl groups is more than that of hydrogen

B. the alkyl group is polar while hydrogen is not

C. distortion caused by the lone pair of oxygen atom is compensated by the bulky alkyl groups

D. the hybridisation of oxygen atom is different in ethers and in water.

Answer: C

View Text Solution

190. Diethyl ether on reaction with CO in specific conditions forms

A. acetic acid

B. carbon dioxide

C. ethyl propanoate

D. acetyl chloride

Answer: C

View Text Solution

191. Which of the following is most suitable method for the preparation of methyl cyclopentyl ether?

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

192. Tert-butyl bromide on treatment with sodium methoxide yields

A. sodium tertiary butoxide

B. methyl tertiary butyl ether

C. tert-butyl alcohol

D. iso-butylene

Answer: D

View Text Solution

193. Which of the following is used as a heat transfer medium?

A. Diphenyl ether

B. Dimethyl ether

C. Ethyl methyl ether

D. None of these

Answer: A

View Text Solution

Check Your Neet

1. Phenols are less reactive than alcohols in reactions involving C - O fission. This is due to

A. greater acidity of phenols than alcohols

B. less acidity of phenols than alcohols

C. C - O bond in phenols becomes weaker due to resonance stabilisation

D. C - O bond in phenols gets double bond character due to resonance.

Answer: D

View Text Solution

2. tert-Butyl ethyl ether cannot be prepared by which of the following reactions?

A. tert-Butanol + Ethanol $\xrightarrow{H^+}$

B. tert-Butyl bromide + Sodium ethoxide $\rightarrow$

C. Sodium tert-butoxide + Ethyl bromide $\rightarrow$

D. iso-Butene + Ethanol $\xrightarrow{H^+}$

Answer: B

View Text Solution

3. An ether which is a liquid at room temperature is

A. $CH_3CH_2OCH_2CH_3$

B. $CH_3CH_2OCH_3$

C. CH_3OCH_3

D. none of these

Answer: A

View Text Solution

4. Which of the following compounds is most reactive towards acid catalysed dehydration?

A. 4-Phenylbutan-1-ol

B. 3-Phenylbutan-1-ol

C. 2-Phenylbutan-2-ol

D. Butan-1-ol

Answer: C

View Text Solution

5. When cis-but-2-ene is treated with cold alkaline $KMnO_4$, the product is

A. racemic mixture of butan-2-ol

B. racemic mixture of butane-2, 3-diol

C. meso-butane-2, 3-diol

D. racemic mixture of butane-1, 2-diol.

Answer: C

View Text Solution

6. Conversion of chlorobenzene into phenol involves

A. modified S_N1 mechanism

B. modified S_N2 mechanism

C. both (a) and (b)

D. elimination - addition mechanism.

Answer: D

View Text Solution

7. In water H - O - H, bond angle is 104.5°, but in ethers (R - O - R), the C - O - C bond angle is about 110°. The reason is

A. positive inductive effect of alkyl groups is more than that of hydrogen

B. the alkyl group is polar while hydrogen is not

C. distortion caused by the lone pair of oxygen atom is more than compensated by the bulky alkyl groups

D. the hybridisation of oxygen atom is different in ethers and in water.

Answer: C

View Text Solution

8. The reaction of a Grignard reagent with a carboxylic acid does not give a secondary alcohol. This is because

A. Grignard reagents only react with aldehydes, ketones, esters and epoxides

B. the carboxylic acid is too sterically hindered to react

C. the carboxylic acid is not electrophilic enough to react

D. Grignard reagent is a base, so an acid-base reaction occurs.

Answer: D

View Text Solution

9. The order of reactivity of alcohols towards sodium metal is

A. primary $>$ secondary $>$ tertiary

B. primary $<$ secondary $<$ tertiary

C. primary $>$ secondary $<$ tertiary

D. primary $<$ secondary $>$ tertiary.

Answer: A

View Text Solution

10. Dehydration of an alcohol in the presence of sulphuric acid gives alkene.

$$CH_3CH_2OH \xrightarrow{H_2SO_4} CH_2 = CH_2 + H_2O$$

Here sulphuric acid acts as

A. an acid

B. a base

C. a catalyst

D. all of these.

Answer: D

View Text Solution

11. An alcohol of molecular formula, $C_5H_{11}OH$ on dehydration gives an alkene, which on oxidation yields a mixture of ketone and an acid. The alcohol is

A. $CH_3CH_2CH(OH)CH_2CH_3$

B. $CH_3\underset{\underset{OH}{|}}{C}HCH_2CH_2CH_3$

C. $(CH_3)_2CHCH(OH)CH_3$

D.

Answer: C

View Text Solution

12. When 2,3-dimethyl-2-butanol undergoes acid catalysed dehydration the minor product is

A. 2, 3-dimethyl-1-butene

B. 2, 3-dimethyl-2-butene

C. 3, 3-dimethyl-1-butene

D. none of these

Answer: A

View Text Solution

13. What is the function of diethyl ether in Grignard reagent preparation?

1. To act as catalyst

2. To act as solvent

3. To provide lone pair of electrons for coordination

4. To act as an acid

A. 1, 2

B. 2, 3

C. 3, 4

D. 2, 4

Answer: B

View Text Solution

14. Which of the following is not true in case of reaction with heated copper at $300^{\circ} C$?

A. Phenol $\rightarrow$ Benzyl alcohol

B. Primary alcohol $\rightarrow$ Aldehyde

C. Secondary alcohol $\rightarrow$ Ketone

D. Tertiary alcohol $\rightarrow$ Olefin

Answer: A

View Text Solution

15. Isopropyl benzene is oxidised in the presence of air to give a compound 'A'. When compound 'A' is treated with dilute mineral acid, the aromatic product formed is

A. phenol

B. benzene

C. benzaldehyde

D. acetophenone.

Answer: A

View Text Solution

16. Intramolecular rearrangement of phenyl acetate to give o- and p-hydroxyacetophenone in the presence of anhydrous $AlCl_3$ is known as

A. Reimer-Tiemann reaction

B. Kolbe's reaction

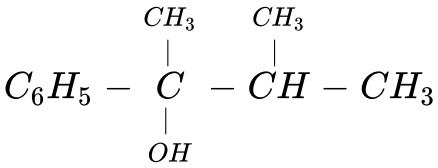
C. Fries rearrangement

D. Claisen rearrangement.

Answer: C

View Text Solution

17. Which of the following reagents will convert acetophenone to the given alcohol ?



A. $CH_3CH_2CH_2MgBr$ followed by hydrolysis

B. $CH_3CH(Br)CH_3$, $AlCl_3$

C. $(CH_3)_2CHMgBr$ followed by acid hydrolysis

D. $CH_3CHOHCH_3$, Zn

Answer: C

View Text Solution

18. In the following reaction,

$$C_2H_5OC_2H_5 \xrightarrow{\text{Red}P+HI} 2X + H_2O$$

X is

A. ethane

B. ethylene

C. butane

D. propane

Answer: A

View Text Solution

19. In Williamson's synthesis, ethoxyethane is prepared by

A. passing ethanol over heated alumina

B. heating sodium ethoxide with ethyl bromide

C. treating ethyl alcohol with excess of H_2SO_4 at 430 - 440 K

D. heating ethanol with dry Ag_2O.

Answer: B

View Text Solution

20. The reagent required to convert propene to propan-1-ol is

A. B_2H_6 followed by $H_2O_2 / NaOH$

B. conc. H_2SO_4 followed by hydrolysis with boiling water

C. HBr followed by hydrolysis with aqueous KOH

D. $Hg(OCOCH_3)_2$ followed by reaction with $NaBH_4$.

Answer: A

View Text Solution

21. The reagent used for the preparation of higher ethers from halogenated ethers is

A. conc. H_2SO_4

B. sodium alkoxide

C. dry silver oxide

D. Grignard reagent.

Answer: D

View Text Solution

Aipmt Neet

1. Given are cyclohexanol (I), acetic acid (II), 2,4,6-trinitrophenol (III) and phenol (IV). In these the order of decreasing acidic character will be

A. $III > II > IV > I$

B. $II > III > I > IV$

C. $II > III > IV > I$

D. $III > IV > II > I$

Answer: A

View Text Solution

2. Which of the following compounds has the most acidic nature?

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

3. Among the following four compounds

(i) Phenol

(ii) Methyl phenol

(iii) meta-nitrophenol

(iv) para-nitrophenol

The acidity order is

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

B. $(iii) > (iv) > (i) > (ii)$

C. $(i) > (iv) > (iii) > (ii)$

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

Answer: A

View Text Solution

4. When glycerol is treated with excess of HI, it produces

A. 2-iodopropane

B. allyl iodide

C. propene

D. glycerol triiodide.

Answer: A

View Text Solution

5. Following compounds are given

(i) CH_3CH_2OH

(ii) CH_3COCH_3

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

(iv) CH_3OH

Which of the above compound(s), on being warmed with iodine solution and NaOH, will give iodoform?

A. (i), (iii) and (iv)

B. Only (ii)

C. (i), (ii) and (iii)

D. (i) and (ii)

Answer: C

View Text Solution

6. In the following reactions,

the major products (A) and (C) are respectively

A.

$$CH_2 = \overset{CH_3}{\underset{|}{C}} - CH_2 - CH_3 \text{ and } \underset{Br}{\underset{|}{CH_2}} - \overset{CH_3}{\underset{|}{CH}} - CH_2 - CH_3$$

B.

$$CH_3 - \overset{\overset{CH_3}{|}}{C} = CH - CH_3 \text{ and } CH_3 - \underset{\underset{Br}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - CH_3$$

C.

$$CH_3 - \overset{\overset{CH_3}{|}}{C} = CH - CH_3 \text{ and } CH_3 - \overset{\overset{CH_3}{|}}{CH} - \underset{\underset{Br}{|}}{CH} - CH_3$$

D.

$$CH_2 = \overset{\overset{CH_3}{|}}{C} - CH_2 - CH_3 \text{ and } CH_3 - \underset{\underset{Br}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - CH_3$$

Answer: B

View Text Solution

7. In the following sequence of reactions ,

$$CH_3 - Br \xrightarrow{KCN} A \xrightarrow{H_3O^+} B \xrightarrow[\text{ether}]{LiAlH_4} C$$

The end product (C) is

A. acetone

B. methane

C. acetaldehyde

D. ethyl alcohol

Answer: D

View Text Solution

8. Which of the following compounds can be used as antifreeze in automobile radiators?

A. Methyl alcohol

B. Glycol

C. Nitrophenol

D. Ethyl alcohol

Answer: B

View Text Solution

9. Among the following ethers, which one will produce methyl alcohol on treatment with hot concentrated HI?

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

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

C. $CH_3 - CH_2 - CH_2 - CH_2 - O - CH_3$

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

Answer: A

View Text Solution

10. Among the following sets of reactants which one produces anisole?

A. $CH_3CHO, RMgX$

B. $C_6H_5OH, NaOH, CH_3I$

C. C_6H_5OH, neutral$FeCl_3$

D. $C_6H_5CH_3, CH_3COCl, AlCl_3$

Answer: B

View Text Solution

11. Which of the following will not be soluble in sodium hydrogen carbonate?

A. 2,4,6-Trinitrophenol

B. Benzoic acid

C. o-Nitrophenol

D. Benzenesulphonic acid

Answer: C

View Text Solution

12. Reaction of phenol with chloroform in presence of dilute sodium hydroxide finally introduces which one of the following functional group?

A. $-COOH$

B. $-CHCl_2$

C. $-CHO$

D. $-CH_2Cl$

Answer: C

View Text Solution

13. Which of the following reaction(s) can be used for the preparation of alkyl halides?

(I) $CH_3CH_2OH + HCl \xrightarrow{anh.\ ZnCl_2}$

(II) $CH_3CH_2OH + HCl \rightarrow$

(III) $(CH_3)_3COH + HCl \rightarrow$

$(CH_3)_2CHOH + HCl \xrightarrow{anh.\ ZnCl_2}$

A. (I) and (II) only

B. (IV) only

C. (III) and (IV) only

D. (I), (III) and (IV) only

Answer: D

View Text Solution

14. The reaction,

can be classified as

A. dehydration reaction

B. Williamson alcohol synthesis reaction

C. Williamson ether synthesis reaction

D. alcohol formation reaction.

Answer: C

View Text Solution

15. The heating of phenyl methyl ether with HI produces

A. iodobenzene

B. phenol

C. benzene

D. ethyl chlorides

Answer: B

View Text Solution

16. Which one is the most acidic compound?

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

17. In the reaction,

the electrophile involved is

A. dichloromethyl cation $\left(\overset{+}{C}HCl_2\right)$

B. formyl cation $\left(\overset{+}{C}HO\right)$

C. dichloromethyl anion $\left(\overset{-}{C}HCl_2\right)$

D. dichlorocarbene $(:CCl_2)$

Answer: D

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18. Compound A, $C_8H_{10}O$, is found to react with NaOI (produced by reacting Y with NaOH) and yields a yellow precipitate with characteristic smell. A and Y are respectively

A. 

B. 

C. 

D. 

Answer: C

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19. Identify the major products P, Q and R in the following sequence of reactions :

A. 

B. 

C. 

D. 

Answer: D

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20. The compound that is most difficult to protonate is

A. 

B. 

C. 

D. 

Answer: A

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21. The structure of intermediate A in the following reaction is

A. 

B. 

C. 

D. 

Answer: C

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