



CHEMISTRY

BOOKS - TARGET CHEMISTRY (HINGLISH)

ALCOHOLS, PHENOLS AND ETHERS

Classical Thinking

1. _____ obtained from oil of peppermint is used to flavour tobacco and food.

- A. Citronellol
- B. Cholesterol
- C. Menthol
- D. Retinol

Answer: C

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2. In hydroxyl derivatives of hydrocarbon, hydrogen atoms are replaced by _____ group.

A. $-X$

B. $-CN$

C. $-OH$

D. $-O-$

Answer: C

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3. Alcohols which have two hydroxyl (-OH) groups are called _____

A. glycols

B. gemdiols

C. dianes

D. dimers

Answer: A



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4. Which of the following is dihydric alcohol ?

A. Glycerol

B. Ethylene glycol

C. Catechol

D. Resorcinol

Answer: B





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5. Glycerol is a _____.

- A. primary alcohol
- B. monohydric alcohol
- C. secondary alcohol
- D. trihydric alcohol

Answer: D



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6. Glycerine has _____

- A. one primary and two secondary -OH groups
- B. one secondary and two primary -OH groups
- C. three primary -OH groups

D. three secondary -OH groups

Answer: B

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7. – CH_2OH is the functional group of _____

- A. primary alcohol
- B. secondary alcohols
- C. tertiary alcohols
- D. quaternary alcohols

Answer: A

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8. Which of the following is an example for primary alcohols ?

- A. Propan-2-ol
- B. Pentan-1-ol
- C. Butan-2-ol
- D. 4,5-Dimethylhexan-3-ol

Answer: B

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9. Which of the following is a secondary alcohol ?

- A. Ethyl alcohol
- B. Isopropyl alcohol
- C. Methyl alcohol
- D. n-Propyl alcohol

Answer: B

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10. Cyclohexanol is a _____ alcohol.

- A. primary
- B. secondary
- C. tertiary
- D. allylic

Answer: B



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11. Tertiary alcohols among the following is _____

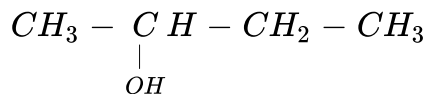
- A. Pentan-3-ol
- B. Propan-1,2,3-triol
- C. 2-Methylbutan-2-ol

D. 4,5-Dimethylhexan-3-ol

Answer: C

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12. The IUPAC name of give compound is _____.



A. Butanol

B. Butan-2-ol

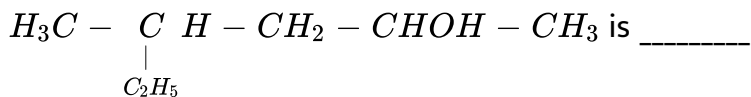
C. Butan-3-ol

D. Butan-1-ol

Answer: B

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13. IUPAC name of the compound



A. 4-Methylhexan-3-ol

B. Heptanol

C. 4-Methylhexan-2-ol

D. 4-Ethylpentan-2-ol

Answer: C



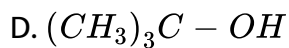
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14. 2-Ethylbutan-1-ol is _____

A. $CH_3CH_2CH(CH_3)CH_2OH$

B. $CH_3(CH_3)CH - CH_2 - CH_2 - OH$

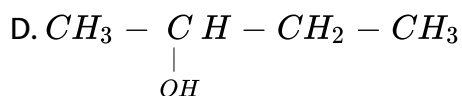
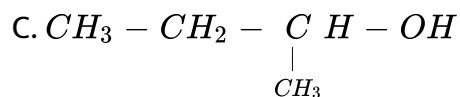
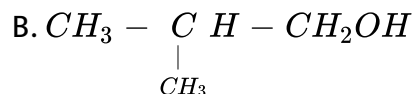
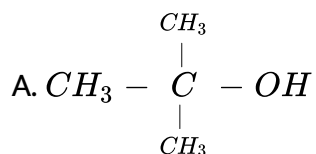
C. $(C_2H_5)_2CHCH_2OH$



Answer: C

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15. Which of the following represents isobutyl alcohol ?



Answer: B

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16. IUPAC name of $HO - CH_2 - CHOH - CH_2OH$ is _____

- A. Glycerol
- B. Glycerine
- C. Propan-1,2,3-triol
- D. Propan-3-ol

Answer: C

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17. An alkyl iodide on refluxing with aqueous KOH solutions gives isopropyl alcohol. The structure of alkyl iodide can be _____

- A. $CH_3CH_2CH_2I$
- B. CH_3CHICH_3
- C. $ICH_2CH_2CH_2I$
- D. ICH_2CHICH_2I

Answer: B

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18. An organic compound on treatment with conc. Sulphuric acid, gives an intermediate compound, which on further hydrolysis gives isopropanol. The organic compound is _____ and the process is called _____

- A. $CH_3CH_2CH_3$, elimination
- B. $CH_3CH_2CH_3$, dehydration
- C. $CH_3CH = CH_2$, substitution
- D. $CH_2 = CHCH_3$, hydration

Answer: D

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19. Acetaldehyde with sodium amalgam in water gives _____

- A. ethanol
- B. methanol
- C. 1,2-ethanediol
- D. acetone

Answer: A

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20. Which reagent can convert acetic acid into ethanol?

- A. Sn/HCl
- B. H_2 / Pt
- C. $LiAlH_4 /$ ether
- D. Na/ alcohol

Answer: C

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21. To prepare propan-2-ol from methyl magnesium bromide , the other reagent required is _____

A. HCHO

B. CH_3CHO

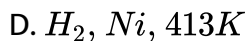
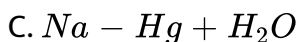
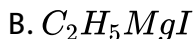
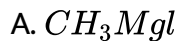
C. C_2H_5OH

D. CH_3COCH_3

Answer: B

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22. HCHO on reaction with 'A' followed by hydrolysis gives $CH_3CH_2CH_2OH$. A is _____.



Answer: B



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23. When ketones are treated with Grignard reagent followed by hydrolysis with dilute acid, the product obtained is _____

A. primary alcohol

B. secondary alcohols

C. tertiary alcohols

D. quaternary alcohols

Answer: C

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24. Alcohols can be prepared by _____

A. alkaline hydrolysis of alkyl halide

B. treatment of olefin with conc. H_2SO_4 , followed by hydrolysis

C. reduction of carbonyl compounds

D. all of these

Answer: D

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25. The oxygen atom in R-OH is _____ hybridised .

A. sp

B. sp^2

C. sp^3

D. dsp^2

Answer: C



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26. Which of the following alcohols is least soluble in water ?

A. CH_3OH

B. C_3H_7OH

C. C_2H_5OH

D. $C_6H_{13}OH$

Answer: D



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27. Which of the following is most viscous liquid ?

- A. Ethyl alcohol
- B. Glycerol
- C. Ethylene glycol
- D. Water

Answer: B



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28. Lower alcohols are miscible with water because of the fact that

_____.

- A. alcohols undergo solvolysis with water molecules
- B. alcohols undergo intermolecular hydrogen bonding with water
- C. alcohols undergo intramolecular hydrogen bonding with water
- D. alcohols undergo reduction with water molecule

Answer: B

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29. Sodium ethoxide is obtained by the reaction of ethyl alcohol with _____ .

- A. sodium hydroxide
- B. sodium bicarbonate
- C. sodium chloride
- D. sodium metal

Answer: D



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30. Alcohol is an organic compound which reacts with an organic acid to give an _____ .

A. ether

B. ester

C. alkene

D. aldehyde

Answer: B



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31. Methyl alcohol reacts with acetyl chloride in the presence of conc. H_2SO_4 to give _____ .

- A. ethyl acetate
- B. chloromethane
- C. acetaldehyde
- D. methyl acetate

Answer: D

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32. For the reaction $C_2H_5OH + HX \rightarrow C_2H_5X + H_2O$

The order of reactivity of halogen acids is _____.

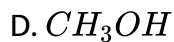
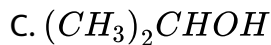
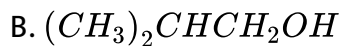
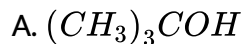
- A. $HCl > HBr > HI$
- B. $HBr > HI > HCl$



Answer: D

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33. Which of the following alcohols is most reactive with HCl in the presence of $ZnCl_2$?



Answer: A

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34. Formation of but-2-ene as major product by dehydration of butan-2-ol is according to _____.

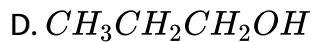
- A. Markownikoff's rule
- B. Saytzeff rule
- C. Steric effect
- D. Anti-Markownikoff's rule

Answer: B

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35. Which one of the following alcohols undergoes acid-catalysed dehydration to alkenes most readily ?

- A. $(CH_3)_2CHCH_2OH$
- B. $(CH_3)_3COH$



Answer: B

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36. Ethanol when passed over Al_2O_3 at 623 K gives _____.

A. diethyl ether

B. ethane

C. butane

D. ethylene

Answer: D

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37. $CH_3CH_2CH_2OH \xrightarrow{PCl_5} X \xrightarrow{alc. KOH} Y$, where Y is _____.

- A. propane
- B. propanol
- C. propene
- D. propyne

Answer: C

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38. The first product of oxidation of a primary alcohol is

- A. alkene
- B. aldehyde
- C. ketone
- D. carboxylic acid

Answer: B

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39. Methanol on oxidation with acidified $K_2Cr_2O_7$ gives the product

A. acetaldehyde

B. formic acid

C. acetic acid

D. acetone

Answer: B

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40. Propan-2-ol on oxidation first forms ketones with _____.

- A. same number of carbon atoms
- B. one carbon atom less
- C. two carbon atom less
- D. two carbon atoms

Answer: A

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41. Which alcohol is difficult to oxidise ?

- A. Methanol
- B. Butan-1-ol
- C. Propan-2-ol
- D. 2-Methylpropan-2-ol

Answer: D

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42. Tertiary alcohols are difficult to oxidise as _____.

- A. there is no hydrogen atom attached to functional carbon
- B. strong oxidising agents are not available
- C. they have three alkyl groups
- D. their structure shows steric hindrance

Answer: A



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43. Oxidation of alcohols depends upon _____

- A. number of carbon atom of alcohol
- B. $-OH$ group of alcohols
- C. number of hydrogen atoms attached to alcoholic carbon

D. hydrogen bonding in alcohol

Answer: C

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44. Ethanol is used _____

- A. in the manufacture of chloroform
- B. as a fuel in spirit lamps
- C. as a main constituent of alcoholic beverages
- D. in/as all of these

Answer: D

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45. Alcohol CANNOT be used in the manufacture of _____.

A. chloral

B. chloroform

C. benzene

D. acetaldehyde

Answer: C

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46. _____ is used to denature ethanol.

A. Methanol

B. Propanol

C. Acetic acid

D. acetaldehyde

Answer: A

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47. _____ is used as the starting material for the preparation of iodoform .

- A. Methyl alcohol
- B. Ethyl alcohol
- C. n-Propyl alcohol
- D. n-Butyl alcohol

Answer: B



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48. _____ is isolated from defensive secretion of a species of grasshopper.

- A. Glycerol

B. Thymol

C. Bombykol

D. Sorbitol.

Answer: B



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49. Ortho-dihydroxy benzene is :

A. carvacrol

B. Resorcinol

C. catechol

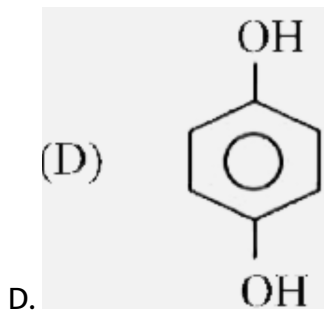
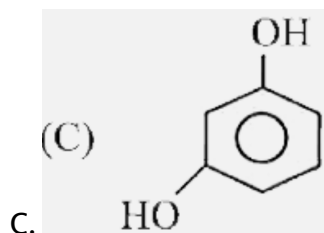
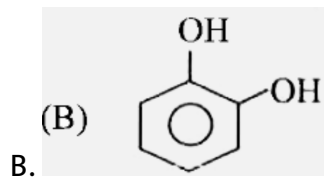
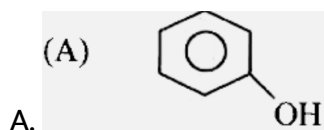
D. orcinol

Answer: C



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50. Which of the following Resorcinol ?



Answer: C

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51. 1, 2, 3 – trihydroxybenzene is also known as

- A. pyrogallol
- B. phloroglucinol
- C. resorcinol
- D. quinol

Answer: A

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52. Example of trihydric phenol is _____

- A. catechol
- B. Resorcinol
- C. hydroquinone
- D. phloroglucinol

Answer: D

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53. The hybrid state of carbon to which phenolic group is attached in phenol is _____ .

A. sp

B. sp^2

C. sp^3

D. dsp^2

Answer: B

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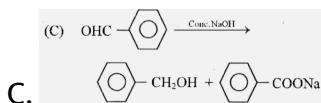
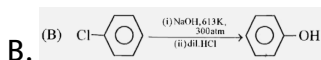
54. Chlorobenzene on heating with NaOH at 350°C under pressure gives

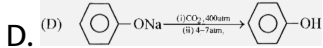
- A. phenol
- B. sodium phenoxide
- C. benzaldehyde
- D. benzyl alcohol

Answer: B

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55. Which of the following is Dow's reaction ?





Answer: B

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56. In Raschig method, chlorobenzene is converted to phenol by _____

- A. catalytic oxidation
- B. catalytic reduction
- C. catalytic hydrolysis
- D. acidification

Answer: C

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57. In the Rasching process for the manufacture of phenol, the catalyst being used as _____

- A. anhydrous $AlCl_3$
- B. cobalt naphthenate
- C. Al_3O_3
- D. SiO_2

Answer: D



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58. In Both Dow's proces of Raschig's processes for the manufacture of phenol , _____

- A. conversion of bezene to phenol is involved
- B. conversion of chlorobenzene to phenol is involved

C. conversion of benzene sulphonic acid to phenol is involved

D. conversion of toluene to phenol is involved

Answer: B

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59. Which is the commercial method for the manufacture of phenol ?

A. Cumene process

B. From benzene sulphonic acid

C. Raschig's process

D. Dow's process

Answer: A

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60. In the manufacture of phenol from isopropyl benzene , the important by-product obtained is _____

A. toluene

B. acetone

C. ethanol

D. acetaldehyde

Answer: B



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61. Conversion of diazonium salt to phenol involves _____ .

A. alkaline hydrolysis

B. decomposition

C. acidic hydrolysis

D. hydration

Answer: C

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62. Phenol at $25^{\circ}C$ is _____.

A. a colourless crystalline solid

B. a transparent liquid

C. a gas

D. yellow solution

Answer: A

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63. Phenol has _____ nature and is _____ in H_2O .

- A. hydroscopic, easily soluble
- B. hydroscopic, sparingly soluble
- C. hydrophilic , highly soluble
- D. hygroscopic, highly soluble

Answer: B

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64. Phenol easily dissolves in _____.

- A. ether
- B. ethanol
- C. water
- D. Both A and B

Answer: D

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65. Which of the following statements is NOT TRUE ?

- A. Pure phenol is a colourless crystalline solid.
- B. Phenol has a melting point of 315 K.
- C. Phenol has a boiling point of 273 K
- D. Phenol turns pink on exposure to air.

Answer: C



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66. The acidic character of phenol is due to _____ .

- A. greater resonance stabilization of phenoxide ion over phenol.
- B. greater resonance stabilization of phenol over phenoxide ion.
- C. tautomerism occurring in phenol

D. the fact that oxygen is more electronegative than hydrogen

Answer: A

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67. Bromination of phenol in non-polar solvent forms _____

- A. o-bromophenol
- B. p-bromophenol
- C. mixture of o and p-bromophenol
- D. m-bromophenol

Answer: C

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68. Phenol on treatment with bromine water gives

A. o-bromophenol

B. p-bromophenol

C. a mixture of ortho and para bromophenol

D. 2,4,6-tribromophenol

Answer: D

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69. Bromination of phenol , will NOT give _____.

A. 

B. 

C. 

D. 

Answer: B



70. Nitration reaction of phenol is _____

- A. aromatic nucleophilic substitution reaction
- B. aromatic electrophilic substitution reaction
- C. aromatic elimination reaction
- D. aromatic addition reaction

Answer: B

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71. $C_6H_5OH \xrightarrow[H_2SO_4]{conc. HNO_3} X$. X is _____

- A. Benzene
- B. Catechol
- C. only p-Nitrophenol

D. 2,4,6-Trinitrophenol

Answer: D

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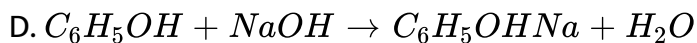
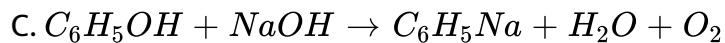
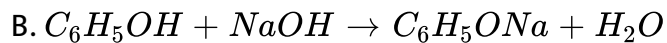
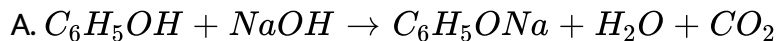
72. On sulhonation , phenol gives two products, ortho and para phenol sulphonic acids . The variation in products depend upon the _____.

- A. concentration of sulphuric acid
- B. change in temperature
- C. change in pressure
- D. change in volume

Answer: B

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73. Dissolution of phenol in NaOH is represented as



Answer: B



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74. Which of the following reactions is Kolbe's reaction ?



Answer: A



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75. Phenols can be distinguished from alcohols by

A. Neutral $FeCl_3$

B. $FeSO_4$ solution

C. $BaCl_2$ solution

D. Iodoform reaction

Answer: A



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

A. methane

B. formic acid

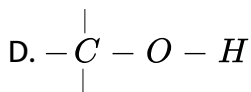
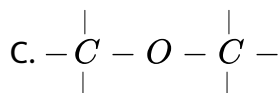
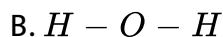
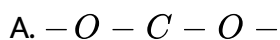
C. phenol

D. alcohol

Answer: C

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77. Ethers contain which of the following linkage ?



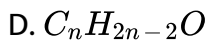
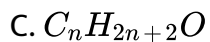
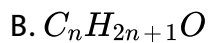
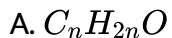
Answer: C





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78. The general formula of aliphatic ethers is _____



Answer: C



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79. The classification of ethers is carried out on the basis of

A. reactivity

B. solubility

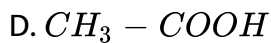
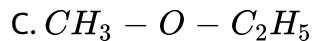
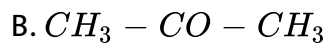
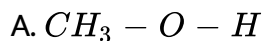
C. alkyl groups attached to oxygen

D. inertness

Answer: C

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80. Which of the following is alkoxy hydrocarbon ?



Answer: C

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81. Simple ether and mixed ether contains _____ alkyl groups respectively.

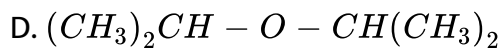
- A. same and same
- B. same and different
- C. different and different
- D. different and same

Answer: B

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82. An example for a mixed ether is _____ .

- A. $H_3C - O - CH_3$
- B. $H_5C_2 - O - CH_2CH_3$
- C. $H_3C - O - CH_2 - CH_3$



Answer: C

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83. Which among the following is a symmetrical ether ?

- A. Diphenyl ether
- B. Anisole
- C. 2-Ethoxypropane
- D. Methyl tert-butyl ether

Answer: A

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84. Epoxides are

- A. cyclic ethers
- B. not ethers
- C. arly-alkyl ethers
- D. ether with another functional group

Answer: A

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85. $CH_3CH_2OCH_2CH_2CH_3$ in IUPAC is known as _____.

- A. 1-propoxyethane
- B. 1-ethoxypropane
- C. 3-ethoxypropane
- D. 3-propoxyethane

Answer: B



86. IUPAC name of $CH_3 - O - \begin{array}{c} CH_3 \\ | \\ C \\ | \\ CH_3 \end{array} H$ is _____ .

- A. 1-methoxypropane
- B. 2-methoxypropane
- C. 2-Ethoxypropane
- D. Ethoxyethane

Answer: B

87. The common name of $C_6H_5 - O - C_2H_5$ is _____

- A. hexyl methyl ether
- B. benzyl methyl ether

C. ethyl phenyl ether

D. benzyl ethyl ether

Answer: C



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88. The R-O-R bond angle in ether is

A. 180°

B. 120°

C. 111.7°

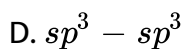
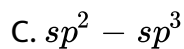
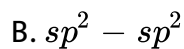
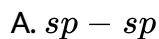
D. 104°

Answer: C



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89. In ether, two C-O sigma bonds are formed by which overlap ?



Answer: D



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90. Number of lone pairs and bond pairs present on oxygen atom in water are respectively _____

A. 1 and 3

B. 2 and 2

C. 2 and 1

D. 1 and 2

Answer: B

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91. Metamers have _____

- A. different functional group and same alkyl group
- B. same functional group and alkyl group
- C. same functional group and different alkyl groups
- D. different functional group and alkyl groups

Answer: C

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92. Diethyl ether is a metamer of _____

A. methoxymethane

B. 1-ethoxypropane

C. 1-methoxypropane

D. butan-2-ol

Answer: C

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93. The functional isomer of propan-1-ol is _____

A. dimethyl ether

B. diethyl ether

C. ethoxymethane

D. methoxyethane

Answer: D



94. The number of isomers obtained from the formula C_3H_8O is

- A. 1
- B. 2
- C. 3
- D. 4

Answer: C

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95. The preparation of ethers from alcohols by using sulphuric acid is called as _____

- A. Williamson's ether synthesis
- B. continuous etherification process

C. diazomethane method

D. Wurtz synthesis

Answer: B

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96. From Williamson's synthesis preparation of which of the following is possible ?

A. Symmetrical ether only

B. Unsymmetrical ether only

C. Symmetrical as well as unsymmetrical ethers

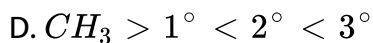
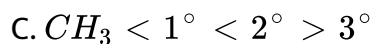
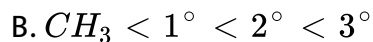
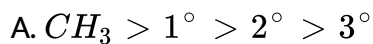
D. Symmetrical esters

Answer: C

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97. In the Williamson synthesis of ethers given by the general equation.

$R - X + R'ONa \rightarrow R - O - R'$ the order of reaction of RX is _____.

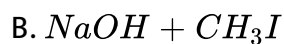
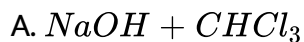


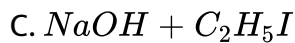
Answer: A



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98. Anisole is obtained from phenol by reaction with _____ .





Answer: B

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99. In the Williamson's synthesis for diethyl ether, which species works as a nucleophile-

A. Halide ion

B. Ethoxide ion

C. Ethyl ion

D. Hydride ion

Answer: B

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100. Propan-1-ol in the presence of $HB\text{F}_4$, reacts with diazomethane to give _____ .

A. di-n-propyl ether

B. dimethyl ether

C. 1-methoxypropane

D. 2-methoxypropane

Answer: C

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101. In the reaction , alcohol+ diazomethane \rightarrow ether + N_2 , the ether CANNOT be _____

A. methyl ethyl ether

B. n-propyl methyl ether

C. isopropyl methyl ether

D. diethyl ether

Answer: D

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102. Which of the following is FALSE regarding diethyl ether ?

A. The oxygen atom contains one lone pair of electrons.

B. It is sparingly soluble in water

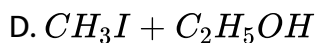
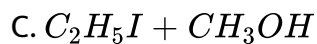
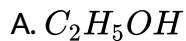
C. It is used as an inert medium for many organic reactions.

D. It is highly inflammable.

Answer: A

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103. Ethyl methyl ether on treating with cold concentrated HI gives

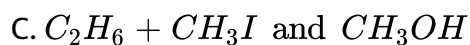
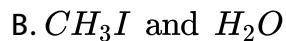


Answer: D



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104. Dimethyl ether when heated with excess HI gives :



D. CH_3I and $HCHO$

Answer: B

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105. Ethers react with the formation of ethyl halide with halogen acids in the order of reactivity as :

A. $HI > HBr > HCl$

B. $HI > HCl > HBr$

C. $HCl > HBr > HI$

D. $HI < HBr < HCl$

Answer: A

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106. When methoxymethane is heated with dilute sulphuric acid under pressure, the product obtained is _____.

- A. methane
- B. methanol
- C. methanal
- D. iodomethane

Answer: B

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107. On hydrolysis, mixed ethers give _____

- A. one alcohol and one acid
- B. one acid and one ester
- C. two alcohols

D. one alcohol and one alkyl halide

Answer: C

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108. Ethers are used when the reaction medium required is _____ .

A. acidic

B. basic

C. inert

D. neutral

Answer: C

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109. Which one of the following is NOT a used of diethyl ether ?

- A. As an anaesthetic.
- B. As a refrigerant .
- C. As an industrial solvent.
- D. An an antiseptic .

Answer: D

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110. Crown ether was discovered by _____

- A. Charles Pederson
- B. Grignard
- C. Williamson
- D. van't Hoff

Answer: A

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111. The first crown ether which was developed synthetically is _____

- A. 17-crown-6
- B. 15-crown-6
- C. 189-crown-6
- D. 12-crown-6

Answer: C



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112. Phenols and alcohols are respectively _____

- A. neutral and basic
- B. basic and acidic

C. acidic and basic

D. acidic and neutral

Answer: D

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113. Phenol and alcohol gives phenoxide and alkoxide respectively on reaction with a metal . The metal is

A. Na

B. Zn

C. Mg

D. Mn

Answer: A

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114. The number of π -electrons present in phenol ring are _____ .

A. 4

B. 6

C. 8

D. 10

Answer: B



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115. In the reaction , Ether $\xrightarrow{\text{hot HI}}$ $A + B + H_2O$, If A and B are same , the ether _____

A. is simple

B. is mixed

C. is simple or mixed

D. cannot be predicted unless the nature of alkyl radicals is known

Answer: A

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116. IUPAC name of vinyl alcohol is _____

A. ethanol

B. ethen-1-ol

C. but-1-en-1-ol

D. propen-1-ol

Answer: B

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117. IUPAC name of resorcinol is _____

- A. 1,2-dihydroxybenzene
- B. 1,3-dihydroxybenzene
- C. 1,4-dihydroxybenzene
- D. 1,2,3-trihydroxybenzene

Answer: B

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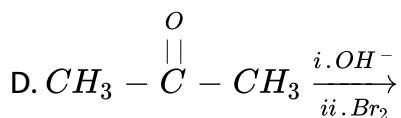
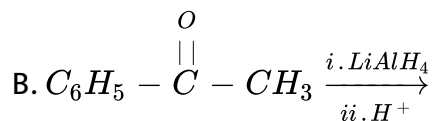
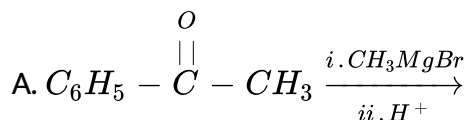
118. The $C_2H_5 - O - C_3H_7$ and $C_4H_9 - O - CH_3$ are _____.

- A. enantiomers
- B. geometrical isomers
- C. metamers
- D. functional isomers

Answer: C

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119. Which one of the following reaction would produce secondary alcohol?



Answer: B

120. Sodium benzene sulphonate reacts with NaOH and then on acidic hydrolysis, it gives:

A. phenol

B. benzoic acid

C. benzene

D. disodium bezaldehyde

Answer: A

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121. Which of the following does not form phenol or phenoxide ion ?

A. C_6H_5Cl

B. C_6H_5COOH

C. $C_6H_5N_2Cl$

D. $C_6H_5SO_3Na$

Answer: B



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122. Phenol is obtained by heating aqueous solution of :

- A. aniline
- B. benzenediazonium chloride
- C. benzoic acid
- D. acetic acid

Answer: B

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123. Formation of di ethyl ether from ethanol is based on a

- A. dehydration reaction
- B. dehydrogenation reaction
- C. hydrogenation reaction

D. heterolytic fission reaction

Answer: A



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Critical Thinking

1. Wood polish mainly contains _____

A. methanol

B. ethanol

C. propanol

D. all of these

Answer: B



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2. Monohydric alcohols are _____.

- A. monoalkyl derivatives of water
- B. monoalkyl derivatives of ammonia
- C. monoalkyl derivatives of alkanes
- D. monoalkyl derivatives of hydroxy benzene

Answer: A

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3. Which of the following compounds does NOT contain at least two primary carbon atoms and two primary alcoholic groups ?

- A. Glycerol
- B. Ethylene glycol
- C. Sorbitol

D. n-Propyl alcohol

Answer: D

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4. The characteristic grouping of secondary alcohol is _____ .

A. 

B. $-CH_2OH$

C. 

D. $\begin{array}{c} | \\ -C- OH \\ | \end{array}$

Answer: A

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5. Monohydric alcohols are functional isomers of _____ .

A. phenols

B. ethers

C. aldehydes

D. ketones

Answer: B



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6. In _____ alcohols , the -OH group is attached to a sp^2 hybridised carbon atom.

A. allylic

B. benzylic

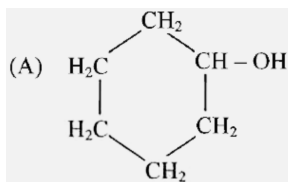
C. vinylic

D. all of these

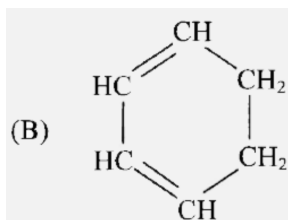
Answer: C

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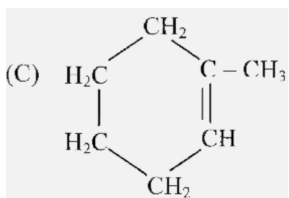
7. The structural formula of cyclohexanol is _____ .



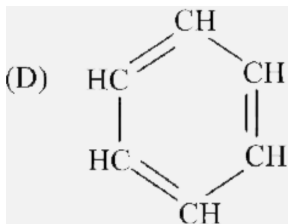
A.



B.



C.



D.

Answer: A

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8. IUPAC name of neopentyl alcohol is _____ .

A. 2,2-dimethylpropan-1-ol

B. 2-methylbutan-2-ol

C. 1,1-dimethylpropan-1-ol

D. 2-Methylpropan-2-ol

Answer: A

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9. The molecular formula of sorbitol is _____ .

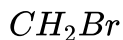
A. $HOCH_2 - CHOH - CH_2OH$



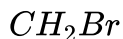
Answer: D

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10. Ethylene glycol is prepared by the hydrolysis of _____ .



A. |



B. ||



C. |



D. ||

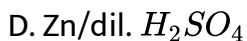
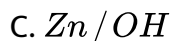
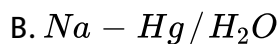
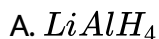


Answer: A



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11. To carry out the conversion of unsaturated aldehyde to unsaturated alcohol, which among the following will be the best reducing agent ?

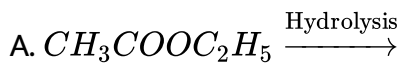


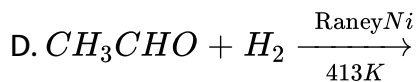
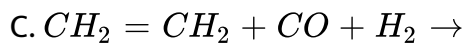
Answer: A



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12. Which of the following reactions does NOT lead to formation of ethanol ?





Answer: C

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13. Which of the following can give monohydric alcohols ?

A. Alkyl halides

B. Aldehydes

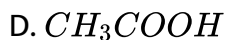
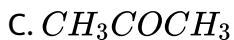
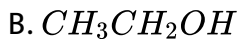
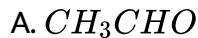
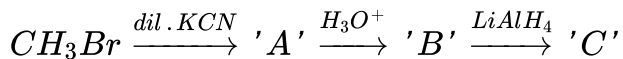
C. Alkenes

D. All of these

Answer: D

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14. The product 'C' in the following reaction is _____.

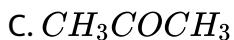
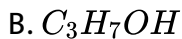
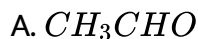


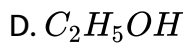
Answer: C



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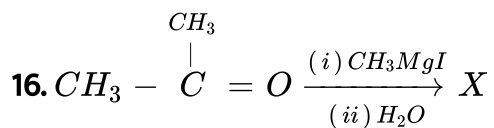
15. C_2H_5MgI reacts with HCHO to form last product :



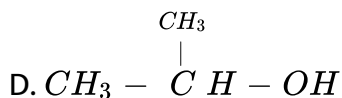
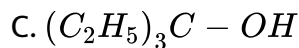
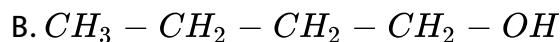
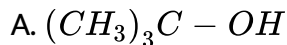


Answer: B

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The product obtained in this reaction is _____.



Answer: A

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17. A tertiary alcohol is obtained when Grignard reagent react with

A. pentan-2-one

B. butanone

C. propanone

D. all of these

Answer: D



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18. The R-O-H bond angle in case of methanol is _____

A. 90°

B. 108.9°

C. 109.28°

D. 180°

Answer: B

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19. Least soluble alcohol in water is _____.

A. 

B. 

C. 

D. 

Answer: D

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20. Decreasing order of boiling points of n-Pentanol (A), n-Pentane (B), Pentan-3-ol(C) and 2,2-Dimethylpropanol (D) is _____

A. A,C,D,B

B. B,D,C,A

C. C,A,D,B

D. A,B,C,D

Answer: A

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21. Boiling point of C_2H_5OH is higher as compared to C_2H_5SH on account of _____.

A. association

B. dissociation

C. low molecular mass

D. high molecular mass

Answer: A

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22. The organic acids are weakly acidic while alcohols are neutral even though both contain -OH group because _____.

- A. association of molecules takes place in alcohols
- B. acids have much stronger hydrogen bonding
- C. resonance stabilization carboxylate ion
- D. of the -I effect of the alkyl group

Answer: C

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23. $ClCH_2CH_2OH$ is stronger acid than CH_3CH_2OH because of :

- A. + *I* effect of *Cl* disperses -ve charge on O atom to produce more stable anion
- B. – *I* effect of Cl disperses -ve charge on O atom to produce more stable anion
- C. – *I* effect of Cl increase -ve charge on O atom of alcohol
- D. + *I* effect of Cl increases -ve charge on O atom of alcohol

Answer: B

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24. On reacting with electropositive metal like Na, alcohols give sodium alkoxides on liberates H_2 . In this reaction alcohols behave as _____.

- A. weak acids
- B. weak bases
- C. neutral

D. strong acids

Answer: A

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25. Alcohols are _____

A. weaker acid than water

B. stronger acids than water

C. amphoteric

D. acidic to litmus

Answer: A

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26. An ester can be obtained by the reaction of ethanol with _____

- A. an aldehyde
- B. an acid anhydride
- C. an acid chloride
- D. both B and C

Answer: D

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27. Arrange the following alcohols in the increasing order of esterification :

- (a) sec -Butyl alcohol
- (b) tert-Butyl alcohol
- (c) n-Butyl alcohol

A. $c > b > a$

B. $c > a > b$

C. $b > b > c$

D. $b > a > c$

Answer: B

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28. When ethanol reacts with acetic acid in presence of H_2SO_4 , the product formed is an ester . Here the ethanol works as a/an_____.

- A. electron rich species
- B. electron deficient species
- C. electrophile
- D. lewis acid

Answer: A

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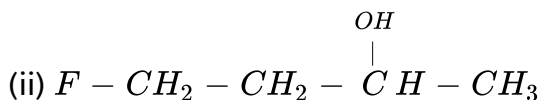
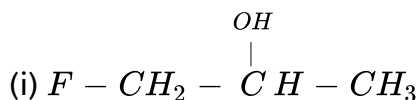
29. Which reagent among the following CANNOT be used to convert alcohol to alkyl halide ?

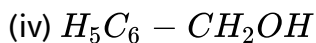
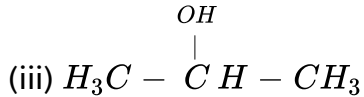


Answer: A

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30. The order of reactivity of the following alcohols towards HCl is _____.





A. $i > ii > iii > iv$

B. $i > iii > ii > iv$

C. $iv > iii > ii > I$

D. $iv > iii > ii > I$

Answer: C

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31. Alkyl iodide can be obtained from alcohol using one of the following reagents. Identify the reagents .

A. Red P, I_2

B. conc. HNO_3 , HI

C. conc. HCl , HI

D. $ZnCl_2$, HI

Answer: A

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32. Which of the following alcohols does not give an aldehyde on oxidation ?

A. Benzyl alcohol

B. sec-Butyl alcohol

C. Allyl alcohol

D. Crotyl alcohol

Answer: B

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33. Choose the FALSE statement among the following .

- A. Primary alcohol are finally oxidised to carboxylic acids.
- B. Secondary alcohols are first oxidised to ketones .
- C. Tertiary alcohols are easily oxidised in neutral medium.
- D. Dil . HNO_3 , is an oxidising agent .

Answer: C



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34. 2-Methylpropan-2-ol on oxidation under drastic condition gives _____ as the final product.

- A. methanoic acid
- B. ethanoic acid
- C. propanoic acid

D. butanoic acid

Answer: B

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35. $C_5H_{10} \xrightarrow{A} C_5H_{12}O \xrightarrow{B} CH_3(CH_2)_3CHO$, A and B in the above reactions are _____.

A. conc. H_2SO_4 , hydrolysis, Na-Hg/ H_2O

B. alc. KOH , $K_2Cr_2O_7$ + dil. H_2SO_4

C. cold conc. H_2SO_4 (hydration), acidified $K_2Cr_2O_7$ + dil. H_2SO_4

D. alc. KOH , Raney Ni

Answer: C

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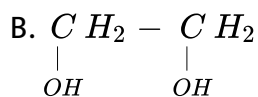
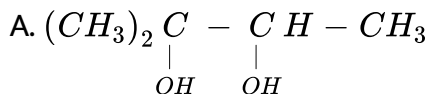
36. When vapours of an alcohol are passed over hot reduced copper, it gives an alkene. The alcohol is

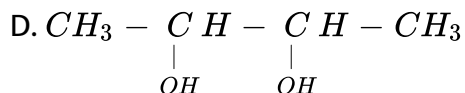
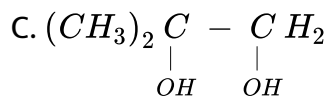
- A. primary
- B. secondary
- C. tertiary
- D. primary and secondary

Answer: C

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37. On treating the organic compound with HIO_4 the products are CH_3COCH_3 and $HCHO$. Hence the compound should be _____.





Answer: C

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38. Ethanol is used in the preparation of _____.

A. DDT

B. tincture iodine

C. pain killer medicines

D. benzene hexachloride

Answer: B

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39. Methyl alcohol is used _____.

- A. for dry cleaning
- B. preparation of perfumes and varnishes
- C. as an antifreeze agent for automobile radiators
- D. in all of these

Answer: D



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40. _____ is used as an ingredient in mouth washes.

- A. Methanol
- B. Ethanol
- C. Propanol
- D. Butanol

Answer: B



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41. Phenol is a bifunctional compound because _____.

- A. it gives reactions of hydroxyl group (-OH) as well as of aromatic ring
- B. it is a strong acid
- C. it is insoluble in NaOH
- D. it is readily soluble in water

Answer: A



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42. Phenols occur in _____

- A. coal tar
- B. wood tar
- C. petroleum distillates
- D. all of these

Answer: D

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43. Systematic name of phenol is _____.

- A. Benzenol
- B. cresol
- C. carbinol
- D. all of these

Answer: A

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44. The compound BrC_6H_4OH is _____.

- A. o-bromophenol
- B. bromophenol
- C. m-bromophenol
- D. p-bromophenol

Answer: B



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45. $C_6H_5CH(CH_3)_2$ is NOT known as _____.

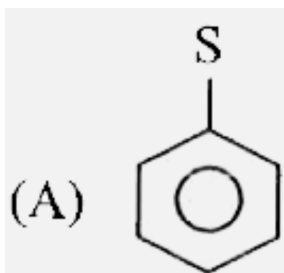
- A. cumene
- B. isopropyl benzene
- C. 2-benzylpropane

D. 2-phenylpropane

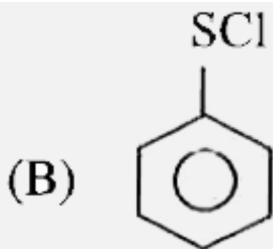
Answer: C

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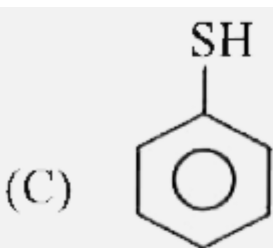
46. Which of the following is Thiophenol ?



A.

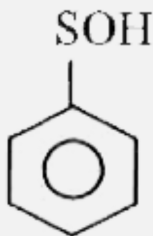


B.



C.

(D)



D.

Answer: C

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47. The carbon-oxygen bond length in phenol is _____.

A. 120 pm

B. 136 pm

C. 150 pm

D. 180 pm

Answer: B

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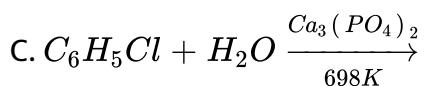
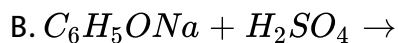
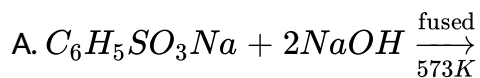
48. Phenol can be prepared from _____.

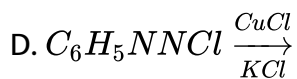
- A. sodium phenoxide
- B. chlorobenzene
- C. sodium benzene sulphonate
- D. all of these

Answer: D

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49. In which of the following reaction, phenol or sodium phenoxide is NOT formed ?





Answer: D

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50. Oxidation of which of the following by air in the presence of vanadium pentoxide gives phenol ?

A. Toluene

B. Benzene

C. benzaldehyde

D. Phenyl acetic acid

Answer: B

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51. Phenols on exposure to light and air gets oxidised to _____.

- A. quinines
- B. quinones
- C. quinols
- D. all of these

Answer: B



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52. Ortho isomer of nitrophenol is steam volatile due to _____.

- A. inter molecular hydrogen bonding
- B. intra molecular hydrogen bonding
- C. hydrogen bonding
- D. covalent bonding

Answer: B

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53. Which of the following is basically responsible for acidic nature of phenols ?

- A. Displacement of lone pair form oxygen atom.
- B. Resonance between bonds with only one pair of shared electrons.
- C. Cleavage of the -O-H bond.
- D. Resonance between bonds with two shared pairs and the lone pair of the electrons.

Answer: C

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54. Phenol dissolves in NaOH to form sodium phenate but on passing CO_2 gas into the solution of sodium phenate, phenol is precipitated. This shows that _____.

- A. phenol is weakly acid but stronger than carbonic acid
- B. phenol is basic
- C. phenol is amphoteric
- D. phenol is weakly acidic, weaker than even carbonic acid

Answer: D

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55. Which of the following sets of groups activates the ortho and para positions in electrophilic aromatic substitutions ?

- A. $-OH$, $-NO_2$, $-CHO$

B. $-NH_2, NO_2$

C. $-OH - OR$

D. $-OR, -C \equiv N, -Cl$

Answer: C

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56. In bromination of phenol, o-Bromophenol is minor product due to _____.

A. steric attraction between $-OH$ and $-Br$

B. steric repulsion between $-OH$ and $-Br$

C. hydrogen bonding

D. low reactivity of bromine

Answer: B

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57. For the conversion of carbolic acid to picric acid, the reagents used are _____.

- A. alc. HNO_2 in the presence of conc. HNO_3
- B. conc. HCl in the presence of conc. HNO_3
- C. conc. HNO_3 in the presence of conc. H_2SO_4
- D. conc. HNO_2 in the presence of conc. H_2SO_4 .

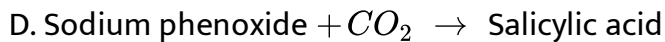
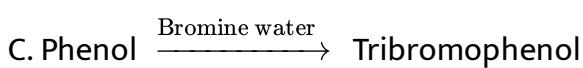
Answer: C



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58. Which of the following NOT CORRECTLY matched ?

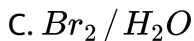
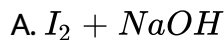
- A. Phenol + $CHCl_3$ + $NaOH$ \rightarrow Saliyladehyde
- B. Phenol + Zn dust \rightarrow Benzoic acid



Answer: B

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59. Phenol can be distinguished from ethyl alcohol by all reagents EXCEPT _____.



Answer: D

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60. Phenol is used in the manufacture of _____

- A. antiseptics
- B. cyclohexanol
- C. bakelite
- D. all of these

Answer: D



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61. Phenol is an antiseptic because of its _____

- A. toxic effect on micro-organisms
- B. associated molecules
- C. high melting and boiling points
- D. acidic character

Answer: A

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62. Phenol is NOT used in the manufacture of _____.

- A. phenolic resins
- B. dyes and herbicides
- C. petrol substitutes
- D. explosives and wood preservatives

Answer: C

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63. Ethers are _____.

- A. alkyl derivatives or anhydride of alcohols

- B. compound derived from water by replacing both the hydrogen atoms of water by alkyl group
- C. alkoxyalkane
- D. all of these

Answer: D

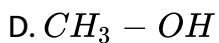
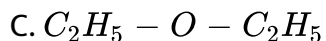
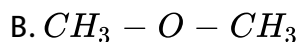
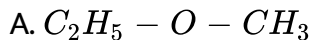
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64. The general formula of aliphatic ethers is same as that of _____.
- A. monohydric alcohols
- B. dihydric alcohols
- C. trihydric alcohols
- D. polyhydric alcohols

Answer: A



65. $C_2H_5 - OH$ and _____ are the functional group isomers .



Answer: B

66. Etherates are

A. ethers

B. solution in ethers

C. complexes of ethers with Lewis acid

D. complexes of ethers with Lewis base

Answer: C

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67. Anisole is _____

- A. a mixed ether
- B. an aliphatic ether
- C. an aromatic ether
- D. both A and C

Answer: D

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68. Four statements ethers are given below. Identify the FALSE statements .

(i) Ethers are named as alkoxy derivatives of alkane .

(ii) The larger alkyl group along with oxygen atom is named as alkoxy groups .

(iii) The larger alkyl group is considered as the parent alkane.

(iv) The position of the alkoxy group is indicated by the maximum number .

A. (i) and (iii)

B. (ii) and (iv)

C. (ii) and (iii)

D. (i) and (iv)

Answer: B



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69. The IUPAC name of

$CH_2 = CH - CH_2 - O - CH_3$ is _____

- A. Methyl propene ethers
- B. 3-Methoxyprop-1-ene
- C. 1-Methoxyprop-2-ene
- D. Methoxypropene

Answer: C



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70. The IUPAC name of $C_2H_5 - O - CH_2 - CH(CH_3)_2$ is

- A. 1-Ethoxy-1-butane
- B. 2-Ethoxy-2-butane
- C. 1-Ethoxy-2-methylpropane
- D. 3-Ethoxy-2-methylpropane

Answer: C

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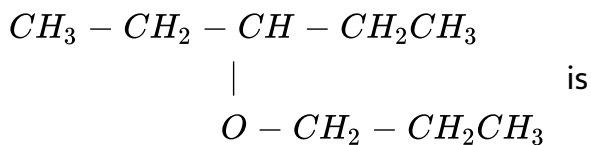
71. $C_6H_5 - O - CH_3$ is named as :

- A. methoxybenzene
- B. anisole
- C. methyl phenyl ether
- D. all of these

Answer: D

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72. Name of the compound is



A. 3-Ethylpropoxypropane

B. 3-Propoxypentane

C. 3-Ethoxyhexane

D. 3-Propoxyhexane

Answer: B

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73. The oxygen containing angle is maximum in

A. H_2O

B. CH_3OH

C. CH_3OCH_3

D. $(CH_3)_3COC(CH_3)_3$

Answer: D





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74. Which of the following is FALSE regarding diethyl ether ?

- A. It does not possess dipole moment .
- B. It is soluble in water
- C. It is soluble in conc. H_2SO_4
- D. It is volatile .

Answer: A



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75. The continuous etherification process will give _____.

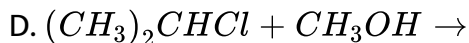
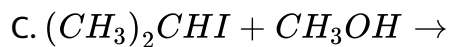
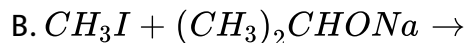
- A. only simple ethers
- B. only mixed ethers
- C. only lower ethers

D. only higher ethers

Answer: A

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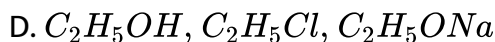
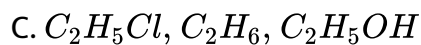
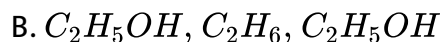
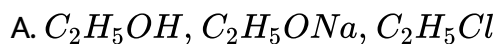
76. Which of the following is the best method for making isopropylmethyl ether ?



Answer: B

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77. A compound X on treatment with Na gives Y and with PCl_5 gives Z. Y and Z react together to give diethyl ether, X, Y and Z are respectively _____.



Answer: A



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78. In Williamson's synthesis, tert-alkyl halides CANNOT be used because _____.

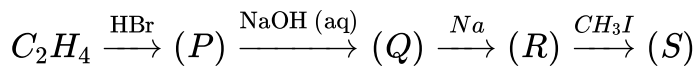
A. they readily decompose to give olefin along with ethers

- B. they are not reactive
- C. the reaction becomes reversible
- D. it is difficult to remove halogen atom

Answer: A

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79. The product (S) in the following sequence of reaction is _____.

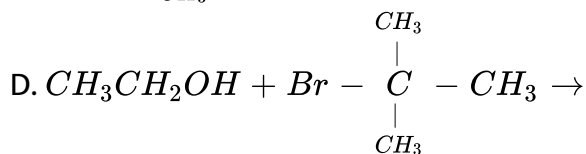
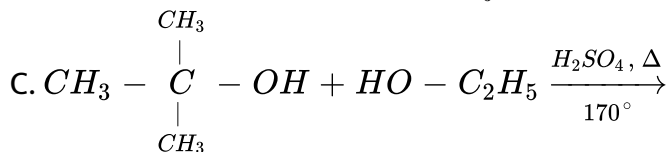
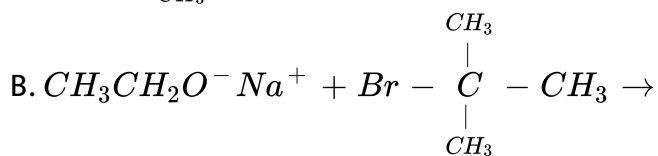
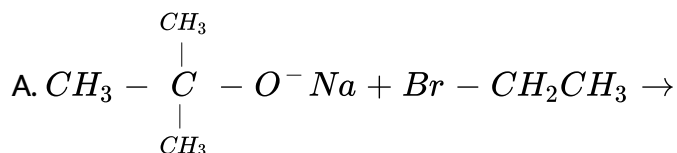


- A. butane
- B. diethyl ether
- C. propane
- D. ethyl methyl ether

Answer: D

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80. For the preparation of tertiary butyl ethyl ether , the reaction preferred is _____.



Answer: A



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81. Which of the following compound is used to obtain methoxymethane ?

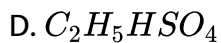
- A. Methanol
- B. Diazomethane
- C. Iodomethane
- D. all of these

Answer: D

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82. $C_2H_5I \xrightarrow[Ag_2O]{\text{moist}} P \xrightarrow[110^\circ C]{H_2SO_4} Q \xrightarrow[140^\circ]{C_2H_5OH} R$. Identify R in the reaction.

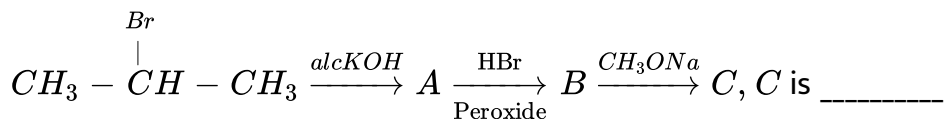
- A. $C_2H_5COOC_2H_5$
- B. $C_2H_5 - O - C_2H_5$
- C. $CH_2 = CH_2$



Answer: B

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83. In the reaction :



- A. diethyl ether
- B. 1-methoxypropane
- C. isopropyl alcohol
- D. propylene glycol

Answer: B

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84. Which of the following ethers has highest boiling point ?

- A. Ethyl ether
- B. Vinyl ether
- C. Phenyl ether
- D. Tetrahydrofuran

Answer: C

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85. The CORRECT order of boiling point is _____.

- A. $C_2H_5 - O - C_2H_5 > C_4H_9OH > CH_3 - O - CH_3$
- B. $C_2H_5 - O - C_2H_5 < C_4H_9OH < CH_3 - O - CH_3$
- C. $CH_3 - O - CH_3 < C_2H_5 - O - C_2H_5 < C_4H_9OH$
- D. $CH_3 - O - CH_3 > C_2H_5 - O - C_2H_5 > C_4H_9OH$

Answer: C

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86. Out of the following statements about ethers , which statement is FALSE ?

A. They are inert in action.

B. They react with Na.

C. They are highly inflammable .

D. They are derivatives of water .

Answer: B

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87. On boiling with concentrated hydrobromic acid, phenyl Ethyl ether will yield

- A. phenol and ethyl bromide
- B. bromobenzene and ethanol
- C. phenol and ethane
- D. bromobenzene and ethane

Answer: A



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88. Reaction of ether with HI is preferred than HBr because _____.

- A. HI is stronger than HBr
- B. HI gives higher concentration of oxonium ion
- C. I^- is a better nucleophile in S_N2 reaction than the Br^- ion

D. all of these

Answer: D

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89. Which of the following reagents is used to obtain only propan-2-ol from 2-isopropoxypropane ?

A. Cold HI

B. C_2H_5ONa

C. CH_2N_2 / HBF_4

D. dil. H_2SO_4

Answer: D

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90. Anisole reacts with the nitrating mixture to give _____.

- A. 2-nitroanisole
- B. 4-nitroanisole
- C. 2,4-dinitroanisole
- D. mixture of 2-nitroanisole and 4-nitroanisole

Answer: D

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91. Ether is used as a solvent in the preparation of _____.

- A. Grignard's reagent
- B. Tollen's reagent
- C. Organometallic reagent
- D. Both A and C

Answer: D

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92. Lower ethers are volatile liquids which on evaporation produce cooling. Therefore , they are used in _____.

A. motors

B. refrigerators .

C. heaters

D. washing machine

Answer: B

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93. Compounds having molecular formula $C_5H_{12}O$ may be classified as _____.

- A. ketones and alcohols
- B. ethers and alcohols
- C. ketones and ethers
- D. aldehydes and ketones

Answer: B

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94. Which one of the following ethers on hydrolysis gives two different products that are successive members of a homologous series ?

- A. Methoxymethane
- B. Ethoxyethane

C. Methoxyethane

D. 2-methoxypropane

Answer: C

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95. Alcohols are functional isomers with ethers. Total number of isomers of alcohols and ethers represented by the formula $C_4H_{10}O$ is _____.

A. 9

B. 7

C. 5

D. 6

Answer: B

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96. Which of the following compounds is optically active ?



Answer: A



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97. Action of diazomethane on phenol liberates



D. CO_2

Answer: C

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98. Which of the following statements are TRUE ?

- A. Phenol is called carbonic acid
- B. All monohydric alcohols are primary alcohols.
- C. Boiling point of ethers are much lower than isomeric alcohols.
- D. Phenols can be prepared by Williamson's synthesis.

Answer: C

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99. Williamson's synthesis is used to prepare _____.

A. acetone

B. diethyl ether

C. PVC

D. bakelite

Answer: B

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100. The compound formed when Ethyl bromide is heated with dry silver oxide is

A. dimethyl ethers

B. diethyl ether

C. methyl alcohol

D. ethyl alcohol

Answer: B

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101. Ether and alcohol can be distinguished by the reaction with _____.

A. metallic sodium

B. PCl_5

C. $SOCl_2$

D. Both A and C

Answer: D

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102. Ethyl alcohol when treated with H_2SO_4 , gives _____.

A. ethylene

B. ethyl hydrogen sulphate

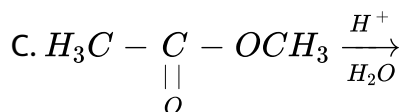
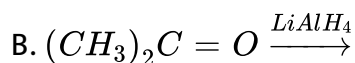
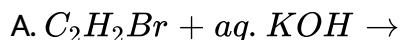
C. diethyl ether

D. all of these

Answer: D

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103. Alcohols CANNOT be prepared from _____.



Answer: D

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104. Phenol $\xrightarrow[\text{(ii) } CO_2 / 140^\circ C]{\text{(i) } NaOH}$ A $\xrightarrow{H^+ / H_2O}$ B $\xrightarrow{Ac_2O}$ C in this reaction the end product C is

- A. salicyl aldehyde
- B. salicylic acid
- C. phenyl acetate
- D. aspirin

Answer: D

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105. An organic compound dissolved in dry benzene evolved hydrogen on treatment with sodium. It is

- A. a ketone
- B. an aldehyde

C. a tertiary amine

D. an alcohol

Answer: D

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106. When a mixture of ethanol and methanol is heated in the presence of concentrated H_2SO_4 , the resulting organic product/ products is/ are

A. $CH_3OC_2H_5$

B. CH_3OCH_3 and $C_2H_5OC_2H_5$

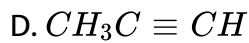
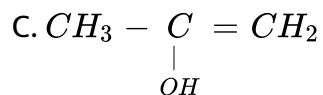
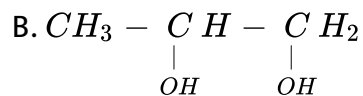
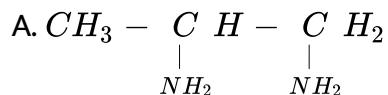
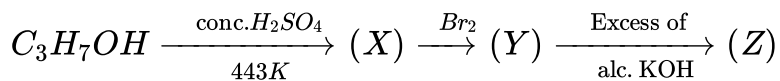
C. $CH_3OC_2H_5$ and CH_3OCH_3

D. $CH_3OC_2H_5$, CH_3OCH_3 and $C_2H_5OC_2H_5$

Answer: D

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107. Identify (Z) in the series.

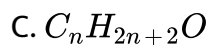
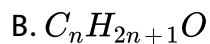
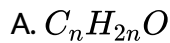


Answer: D

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Competitive Thinking

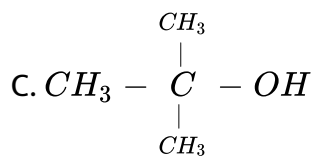
1. The general molecular formula, which represents the homologous series of alkanols is

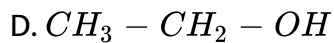


Answer: C

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2. Which of the following is tertiary alcohol?





Answer: C

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3. This is a tertiary alcohol :

A. 3-Methylbutan-2-ol

B. Butan-2-ol

C. 2-Methoylpropan-2-ol

D. Pentan-2-ol

Answer: C

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4. IUPAC name of $CH_3 - \underset{\substack{| \\ CH_3}}{C}H - \underset{\substack{| \\ OH}}{C}H - CH_3$ is _____.

- A. 2-Methylbutan-3-one
- B. 3-Methylbutan-2-ol
- C. 2-Methylbutan-3-ol
- D. 3,3-Dimethylpropan-2-ol

Answer: B



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5. The conversion of propene to propanol is _____ type of reaction.

- A. hydrogenation
- B. hydration
- C. hydrolysis
- D. dehydrogenation

Answer: B

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6. Ethyl alcohol is industrially prepared from ethylene by:

- A. permanganate oxidation
- B. catalytic reduction
- C. absorbing in H_2SO_4 followed by hydrolysis
- D. fermentation

Answer: C

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7. Propene on hydration gives

- A. propan-1-ol

B. propan-2-ol

C. propane

D. propyne

Answer: B

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8. Acid catalyzed hydration of alkenes except ethene leads to the formation of

A. primary alcohol

B. secondary or tertiary alcohol

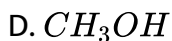
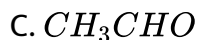
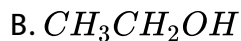
C. mixture of primary and secondary alcohols

D. mixture of secondary and tertiary alcohols .

Answer: B

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9. $CH_2 = CH_2 + B_2H_6 \xrightarrow[H_2SO_4]{NaOH}$ Product. Product is :

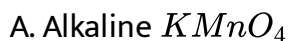


Answer: B



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10. Propene, $CH_3 - CH = CH_2$, can be converted to 1-propanol by oxidation. Which set of reagents among the following is ideal to effect the conversion?



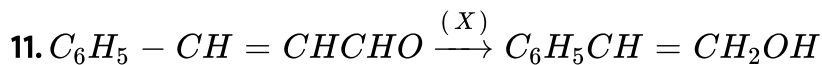
B. B_2H_6 and alkaline H_2O_2

C. O_3 / Zn dust

D. OsO_4 / CH_2Cl_2

Answer: B

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In the above sequence (X) can be:

A. H_2 / Ni

B. $NaBH_4$

C. $K_2Cr_2O_7 / H^+$

D. H_2 / Pd

Answer: B

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12. Which one of the following compounds gives a secondary alcohol upon treatment with methyl magnesium bromide ?

- A. Formaldehyde
- B. Formic acid
- C. acetaldehyde
- D. Acetone

Answer: C

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13. Acetyl bromide reacts with excess of CH_3MgI followed by treatment with a saturated solution of NH_4Cl gives:

- A. 2-methylpropan-2-ol

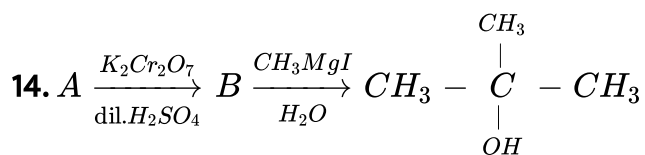
B. acetamide

C. acetone

D. acetyl iodide

Answer: A

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The reactant A is _____.

A. $CH_3CHOHCH_3$

B. CH_3COCH_3

C. C_2H_5OH

D. CH_3COOH

Answer: A



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15. Order of boiling point among primary , secondary and tertiary alcohols is :

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

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

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

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

Answer: A



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16. Which of the following compounds has lowest boiling point ?

A. n-butyl alcohol

- B. isobutyl alcohol
- C. tert-butyl alcohol
- D. sec-butyl alcohol

Answer: C

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17. The boiling point of glycerol is more than propanol because of

- A. hydrogen bonding
- B. hybridization
- C. resonance
- D. metamerism

Answer: A

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18. The boiling point of methanol is greater than that of Methyl thiol because

- A. there is intramolecular hydrogen bonding in methanol and intermolecular hydrogen bonding in methyl thiol
- B. there is intermolecular hydrogen bonding in methanol and no hydrogen bonding in methyl thiol
- C. there is no hydrogen bonding in methanol and intermolecular hydrogen bonding in methyl thiol
- D. there is intramolecular hydrogen bonding in methanol and no hydrogen bonding in methyl thiol

Answer: B



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19. Which of the following is most soluble in water ?

- A. Normal butyl alcohol
- B. isobutyl alcohol
- C. Tertiary butyl alcohol
- D. Secondary butyl alcohol

Answer: C



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20. Sodium with ethyl alcohol gives which of the following gases ?

- A. H_2
- B. N_2
- C. CO_2
- D. O_2

Answer: A

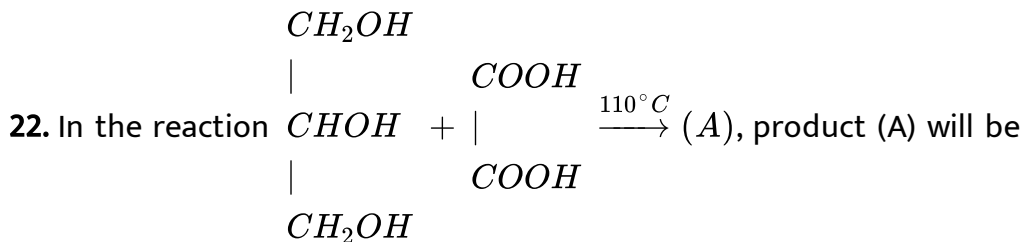
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21. Which of the following react with benzoic acid to form ethyl benzoate?

- A. Ethyl alcohol
- B. Cinnamic acid
- C. Sodium ethoxide
- D. Ethyl chloride

Answer: A

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_____.

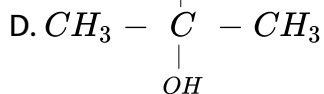
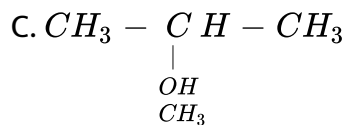
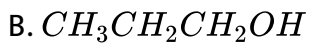
- A. glycerol monoformate
- B. allyl alcohol
- C. formaldehyde
- D. acetic acid

Answer: A

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23. Which of the following compounds reacts immediately with Lucas reagent ?

- A. $\text{CH}_3\text{CH}_2\text{OH}$



Answer: D

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24. Which will give immediate turbidity on shaking with HCl at room temperature ?

A. 2-Methylbutan-1-ol

B. 2-Methylpropan-2-ol

C. 2-Ethylbutan-1-ol

D. 3-Methylbutan-1-ol

Answer: B



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25. The medium used to convert an alcohol into an alkyl chloride using thionyl chloride is

A. pyridine

B. water

C. ether

D. ammonia

Answer: A



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26. Alcohol gives rise to alkene in which reaction ?

A. Hydrolysis

B. Dehydration

C. Reduction

D. Oxidation

Answer: B

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27. The ease of dehydration in alcohols is in the order of _____.

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

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

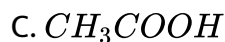
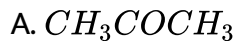
C. $2^\circ > 1^\circ > 3^\circ$

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

Answer: A

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28. On reaction with hot conc. H_2SO_4 , which one of the following compounds loses a molecule of water ?



Answer: B



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29. During the dehydration of alcohols to alkenes by heating with conc. H_2SO_4 , the initiating 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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30. When alcohol reacts with conc. H_2SO_4 , intermediate compound formed is :

A. carbonium ion

B. alkoxy ion

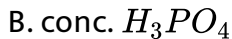
C. alkyl hydrogen sulphate

D. carbanion

Answer: A

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31. The best method to prepare cyclohexene from cyclohexanol is by using

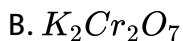
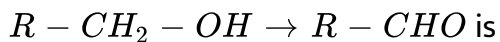


Answer: B



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32. The most suitable reagent for the conversion of



C. CrO_3

D. PCC (Pyridinium chlorochromate)

Answer: D

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33. $CH_3 - CH = CH_2 \xrightarrow{\text{cold } H_2SO_4} A \xrightarrow[H_2O]{\Delta} B \xrightarrow{K_2Cr_2O_7} C$ Identify C.

A. propanol

B. propionaldehyde

C. butanone

D. propanone

Answer: D

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34. Which is used as an antifreeze ?

- A. Glycol
- B. Ethyl alcohol
- C. Water
- D. Methanol

Answer: A



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35. Glycerol is used _____.

- A. as a sweetening agent
- B. in the manufacture of good quality soap
- C. in the manufacture of nitro glycerine
- D. in all of these

Answer: D

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36. Which of the following characteristic group is present in carbolic acid ?

A. $-COOH$

B. $-COCl$

C. $-COOR$

D. $-OH$

Answer: D

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37. Carbolic acid is

A. phenol

B. phenyl benzoate phenyl acetate

C. phenyl acetate

D. salol

Answer: A

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38. Cresol has :

A. alcoholic -OH

B. phenolic -OH

C. $-COOH$

D. $-CHO$

Answer: B



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39. 2, 4, 6-trinitrophenol is

- A. tear gas
- B. picric acid
- C. chloropicrin
- D. all of these

Answer: B

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40. The starting raw material in Dow's process is _____.

- A. aniline
- B. chlorobenzene
- C. diazobenzene

D. phenol

Answer: B

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41. Name the catalyst used in commercial method of preparation of phenol.

A. Silica

B. Calcium phosphate

C. Anhydrous aluminium chloride

D. Cobalt naphthenate

Answer: D

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42. Compared to saturated alcohols , phenols have _____.

- A. low B.P. and low solubility in water
- B. high B.P. and low solubility in water
- C. high B.P. and high solubility in water
- D. none of these

Answer: B



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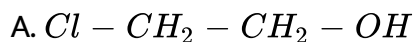
43. Phenol is

- A. a weaker base than NH_3 .
- B. stronger acid than carbonic acid
- C. weaker acid than carbonic acid
- D. a neutral compound

Answer: C

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44. Which is the strongest acid ?



B. 

C.  

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45. Which among the following phenolic compounds is most acidic in nature?

A. p-aminophenol

B. phenol

C. m-nitrophenol

D. p-nitrophenol

Answer: D

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46. Which one is the most acidic compound ?

A. 

B. 

C. 

D. 

Answer: C

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47. Phenol reacts with bromine water in the ratio of _____ to give 2,4,6-Tribromo phenol.

A. 1 : 1

B. 1 : 2

C. 1 : 3

D. 1 : 4

Answer: C



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48. Nitration of phenol at room temperature with dil. HNO_3 yields _____

A. o-nitrophenol

B. p-nitrophenol

C. 2,4,6-trinitrophenol

D. mixture of A and B

Answer: D

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49. The carbolic acid reacts with nitrating mixture to give _____.

A. o-nitrophenol

B. p-nitrophenol

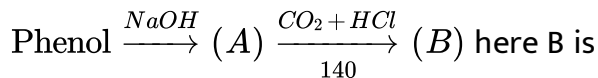
C. 2,4,6-trinitrophenol

D. o-and p-nitrophenol

Answer: C

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50. In the reaction



- A. Salicylaldehyde
- B. benzoic acid
- C. Chlorobenzene
- D. Salicylic acid

Answer: D



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

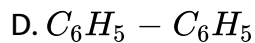
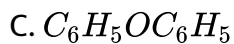
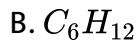
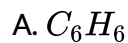
- A. $-\text{CHCl}_2$
- B. $-\text{CHO}$



Answer: B

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52. Phenol on distillation with zinc dust gives _____.



Answer: A

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53. In Friedel-Crafts acylation , besides $AlCl_3$, the other reactants are _____.

A. 

B. 

C. 

D. 

Answer: B

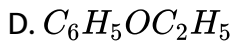
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54. Which of the following is a simple ether ?

A. CH_3OCH_3

B. $C_2H_5OCH_3$

C. $C_6H_5OCH_3$



Answer: A

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55. Name of $(CH_3)_2CH - O - CH_2 - CH_2 - CH_3$ is _____.

A. isopropyl n-propyl ether

B. dipropyl ether

C. di-isopropyl ether

D. isopropyl propyl ketone

Answer: A

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56. The compound which is not isomeric with diethyl ether is :

A. n-propyl methyl ether

B. Butan-1-ol

C. 2-methylpropan-2-ol

D. butanone

Answer: D



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57. The molecular formula of compound is $C_4H_{10}O$, it represents three isomers, then the type of isomerism is _____.

A. functional isomerism

B. metamerism

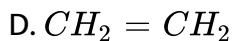
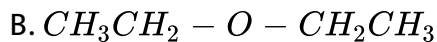
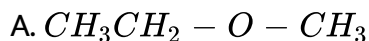
C. chain isomerism

D. all of these

Answer: B

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58. Conc. H_2SO_4 heated with excess of C_2H_5OH at $1406^\circ C$ to form



Answer: B

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59. In which case Methyl-butyl ether is formed ?



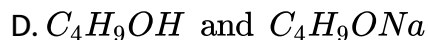
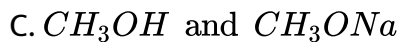
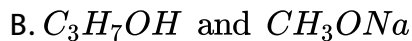
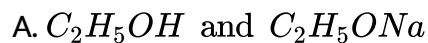


Answer: B



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60. An organic compound A reacts with sodium metal and forms B. On heating with conc. H_2SO_4 , A gives diethyl ether. So A and B are



Answer: A



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61. Which of the following ether is formed from alcohol and diazomethane ?

- A. Ethoxypropane
- B. 2-methoxypropane
- C. 2-Ethoxypropane
- D. 2-Ethoxy-2-methylbutane

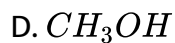
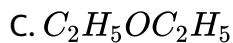
Answer: B



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62. Ether which is liquid at room temperature is _____.

- A. $C_2H_5OCH_3$
- B. CH_3OCH_3



Answer: C

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63. Select the ether among following that yields methanol as one of the products on reaction with cold hydroiodic acid

A. 1-Methoxybutane

B. 1-Methoxy-2-methylpropane

C. 2-Methoxy-2-methylpropane

D. Methoxybenzene

Answer: C

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64. Reaction of which among the following ethers with HI in cold leads to formation of methyl alcohol?

- A. ethyl methyl ether
- B. methyl propyl ether
- C. isopropyl methyl ether
- D. tert-butyl methyl ether

Answer: D



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65. tert-Butyl methyl ether on treatment with hydrogen iodide in cold gives _____.

- A. tert-butyl iodide and methyl iodide
- B. isopropyl alcohol and methyl iodide

C. isopropyl alcohol and methyl alcohol

D. isopropyl iodide and methyl alcohol

Answer: D

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66. Isopropyl methyl ether when treated with cold hydrogen iodide gives

A. isopropyl iodide and methyl iodide

B. isopropyl alcohol and methyl iodide

C. isopropyl alcohol and methyl alcohol

D. isopropyl iodide and methyl alcohol

Answer: B

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67. The heating of phenyl-methyl ethers with HI produces _____.

- A. iodobenzene
- B. phenol
- C. benzene
- D. ethyl chlorides

Answer: B



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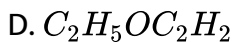
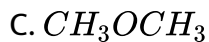
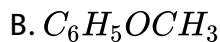
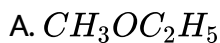
68. Diethyl ether , when heated with excess HI produces _____.

- A. ethanol
- B. iodoform
- C. ethyl iodide
- D. methyl iodide

Answer: C

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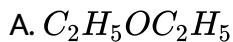
69. The ether that undergoes electrophilic substitution reactions is

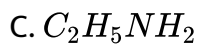
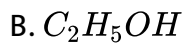


Answer: B

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70. Which is used as solvent during reactions with Grignard reagent ?





Answer: A

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71. According to Lewis concept of acids and bases, ether is

A. acidic

B. basic

C. neutral

D. amphoteric

Answer: B

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72. 2,2 -dichlorobutane on boiling with aqueous KOH gives

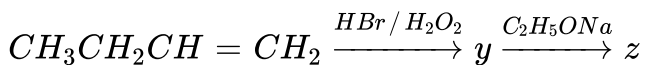
- A. butanal
- B. butan-2-one
- C. Butan-2-ol
- D. butanoic acid

Answer: B

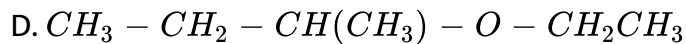


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73. Identify in the sequence



- A. $CH_3 - (CH_2)_3 - O - CH_2CH_3$
- B. $(CH_3)_2 - CH_2 - O - CH_2 - CH_3$
- C. $CH_3 - (CH_2)_4 - O - CH_3$



Answer: A

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74. Dow's process is for _____.

- A. manufacture of phenol
- B. manufacture of diethyl ether
- C. manufacture of acetone
- D. manufacture of ethyl alcohol

Answer: A

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75. Phenol in presence of sodium hydroxide reacts with chloroform to form salicylaldehyde.

The reaction is known as

- A. Kolbe's reaction
- B. Reimer-Tiemann reaction
- C. Stephen reaction
- D. Etard reaction

Answer: B

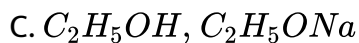


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76. $A + PCl_5 \rightarrow B$

$B \xrightarrow[\text{ether}]{Na}$ n-butane. A and B are _____.

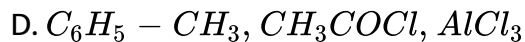
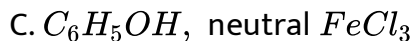
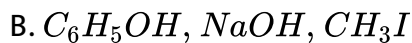
- A. CH_3OH, CH_3ONa



Answer: B

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



Answer: B

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78. What is the quantity of hydrogen gas liberated when 46g sodium reacts with excess ethanol ?

(Given atomic mass of $Na = 23$)

A. $2.4 \times 10^{-3} kg$

B. $2.0 \times 10^{-3} kg$

C. $4.0 \times 10^{-3} kg$

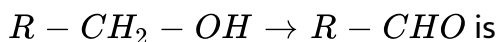
D. $2.4 \times 10^{-2} kg$

Answer: B

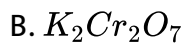


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79. The most suitable reagent for the conversion of



A. $KMnO_4$



Answer: D

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80. Which of the following are isomers ?

A. Methyl alcohol and dimethyl ether

B. Ethyl alcohol and dimethyl ether

C. Acetone and acetaldehyde

D. Propionic acid and propanone

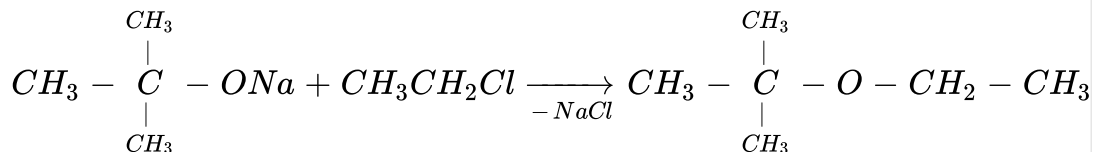
Answer: B

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81.

The

reaction



is called

- A. Williamson synthesis
- B. Williamson continuous etherification process
- C. Etard reaction
- D. Gatterman - Koch reaction

Answer: A[Watch Video Solution](#)

82. Which one of the following NOT give a primary alcohol on reduction ?

- A. Propanoic acid
- B. Propanal

C. Methyl propanoate

D. Propan-2-one

Answer: D

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83. Which of the following compounds has highest boiling point ?

A. Propan-1-ol

B. n-Butane

C. Chloroethane

D. Propanal

Answer: A

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84. What is the possible number of monohydroxy derivatives of an aliphatic alkane (hydrocarbon) consisting of total five carbon atoms including only one methyl group as a branch ?

A. 2

B. 3

C. 4

D. 5

Answer: C



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85. Which reagent is used for bromination of methyl phenyl ether ?

A. Br_2 / Red P

B. Br_2 / CH_3COOH

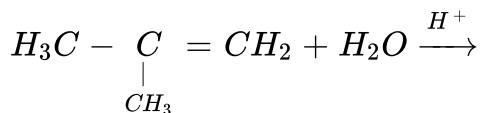
C. $Br_2 / FeBr_3$

D. HBr / Δ

Answer: B

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86. In presence of few drops of conc. H_2SO_4 , the product formed in the following reaction is :

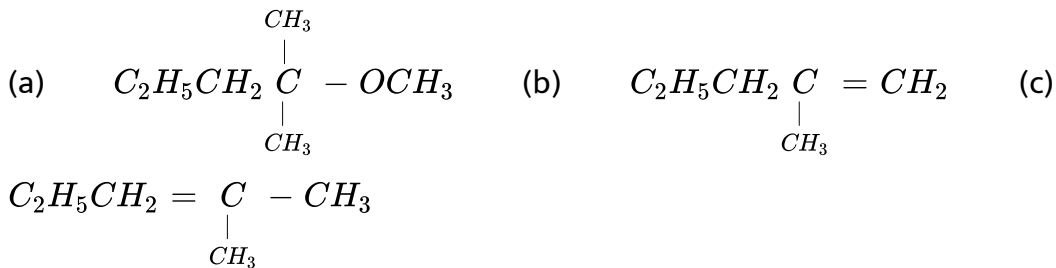


- A. 2-methylpropan-2-ol
- B. 2-methylpropanal
- C. 1,2-dihydroxy-2-methylpropane
- D. 2-methylpropanoic acid

Answer: A

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87. 2-chloro-2-methylpentane on reaction with sodium methoxide in methanol yields:



A. all of these

B. a and c

C. c only

D. a and b

Answer: A



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88. In which of the following reactions carbon-carbon bond formation takes place ?

- A. Cannizaro
- B. Reimer -Tiemann
- C. HVZ reaction
- D. Schmidt reaction

Answer: B



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Evaluation Test

1. In the carbinol system , monohydric alcohols are named as derivatives of _____.

- A. methyl alcohol

B. ethyl alcohol

C. n-Propyl alcohol

D. phenol

Answer: A

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2. The compound that will react most readily with NaOH to form an alcohol is _____.

A. CH_3Br

B. $CH_3 - CH_2 - CH_2 - Br$

C. $CH_3 - \underset{\substack{| \\ Br}}{CH} - CH_3$

D. $(CH_3)_3CBr$

Answer: D

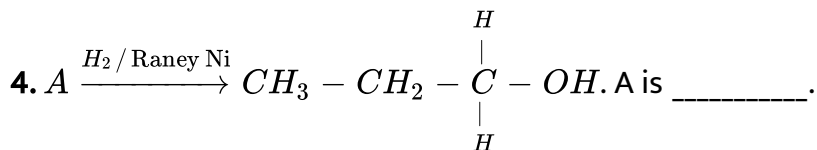
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3. Which of the following alkenes when passed through conc. H_2SO_4 followed by hydrolysis with boiling water would give tert-butyl alcohol

- A. Ethylene
- B. Isobutylene
- C. Propylene
- D. n-Butylene

Answer: B

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- A. propanone

B. acetaldehyde

C. propionaldehyde

D. propanoic acid

Answer: C

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5. In the formation of tertiary alcohol from C_2H_5MgBr and acetone , which part of the Grignard reagent will act as a nucleophile ?

A. C_2H_5

B. Mg

C. Br

D. all of these

Answer: A

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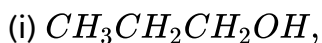
6. Which of the following has highest solubility in water ?

- A. n-Butyl alcohol
- B. sec-Butyl alcohol
- C. Isobutyl alcohol
- D. tert-Butyl alcohol

Answer: D

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7. Three alcohols



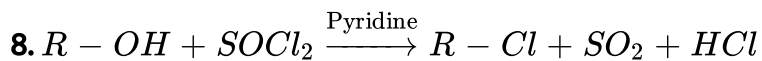
were treated separately with Lucas reagent (Conc. $HCl + ZnCl_2$) . What results do you expect at room temperature.

- A. (ii) and (iii) react immediately and (i) in about 5 minutes .
- B. (iii) reacts immediately , (ii) reacts in about 5 minutes and (i) not at all.
- C. (i) reacts immediately , (ii) reacts in about 5 minutes and (iii) not at all.
- D. (i) reacts in about 5 minutes , (ii) reacts in about 15 minutes and (iii) not at all.

Answer: B



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Pyridine in the above reaction -

- A. catalyses the reaction
- B. is used to dissolve alkyl chloride.
- C. is used to remove other impurities .
- D. is used to absorb SO_2 gas

Answer: A

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9. Which alcohol is difficult to oxidize ?

- A. Methanol
- B. Butan-1-ol
- C. Propan-2-ol
- D. 2-Methylpropan-2-ol

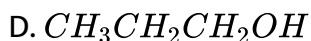
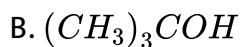
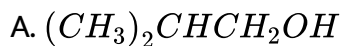
Answer: D





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10. Which one of the following alcohols undergoes acid-catalysed dehydration to alkenes most readily ?



Answer: B



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11. Which of the following alcohols gives the best yield to dialkyl ether on being heated with a trace of sulphuric acid ?



B. Pentan-2-ol

C. 2-Methylbutan-2-ol

D. Propan-2-ol

Answer: A



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12. Phenoxide ion is more stable than phenol due to the _____.

A. resonating structure of benzene ring

B. delocalisation of positive charge in phenoxide ion

C. delocalisation of negative charge in phenoxide ion

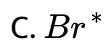
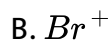
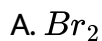
D. all of these

Answer: C



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13. Attacking species in bromination of phenol is _____.



Answer: B



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14. Oxidation of _____ by chromic acid yields benzoquinone.

A. benzene

B. phenol

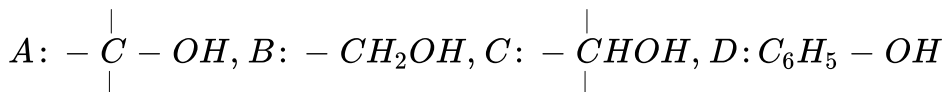
C. benzaldehyde

D. benzoic acid

Answer: B

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15. Four organic compound have functional group as shown below :



The purple colouration of neutral $FeCl_3$ will be given by _____.

A. A and B

B. A and C

C. only D

D. all of these

Answer: C

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16. The conversion of m-nitrophenol to resorcinol involves respectively:

A. hydrolysis , diazotization and reduction

B. diazotization , reduction and hydrolysis

C. hydrolysis, reduction and diazotization

D. reduction , diazotization and hydrolysis

Answer: D



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17. The correct order of acid strength of the following substituted phenol in water at $28^{\circ}C$ is :

A. p-nitrophenol < p-fluorophenol < p-chlorophenol

B. p-chlorophenol < p-fluorophenol < p-nitrophenol

C. p-fluorophenol < p-chlorophenol < p-nitrophenol

D. p-fluorophenol < p-nitrophenol < p-chlorophenol

Answer: C

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18. In the presence of alumina as catalyst , two alcohol molecules will undergo dehydration and form

A. ester

B. ether

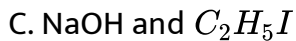
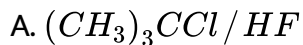
C. anhydride

D. aldehyde

Answer: B

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19. An ether is obtained when phenol reacts with _____.



Answer: C



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20. Methoxymethane is obtained from _____ .

A. methyl iodide and diazomethane

B. chloromethane and sodium ethoxide

C. diazomethane and ethanol

D. diazomethane and methanol

Answer: D

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21. Which reagent is used to get only iodoethane from diethyl ether ?

A. CH_2N_2

B. dil. H_2SO_4

C. Cold HI

D. Hot HI

Answer: D

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