



CHEMISTRY

BOOKS - ACCURATE PUBLICATION

ALCOHOL, PHENOL AND ETHER

Multiple Choice Questions

1. Monochlorination of toluene in sunlight followed by hydrolysis with aq. NaOH yields

A. o-Cresol

B. m-Cersol

C. 2,4-Dihydroxytoluene

D. Benzyl alcohol

Answer: D



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2. How many alcohols with molecular formula

$C_4 - H_{10}O$ are chiral in nature ?

A. 1

B. 2

C. 3

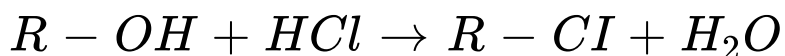
D. 4

Answer: A



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3. What is the correct order of reactivity of alcohols in the following reaction ?



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

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

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

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

Answer: C



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4. CH_3CH_2OH Can be converted into CH_3CHO by _____

A. catalytic hydrogenation

B. treatment with $LiAlH_4$

C. treatment with Pyridinium
chlorochromate

D. treatment with $KMnO_4$

Answer: C



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5. The process of converting alkyl halides into alcohols involves

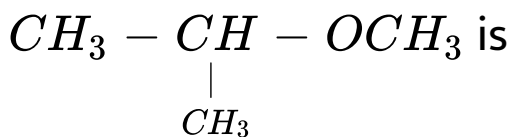
- A. addition reaction
- B. substitution reaction
- C. dehydrohalogenation reaction
- D. rearrangement reaction

Answer: B



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6. IUPAC name of compound



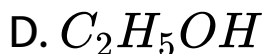
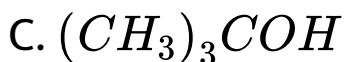
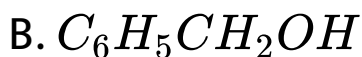
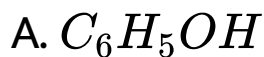
- A. 1-methoxy-1-methylethane
- B. 2-methoxy -2 - methylethane
- C. 2-methoxypropane
- D. isopropylmethyl ether

Answer: C



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7. Which of the following compounds will react with sodium hydroxide solution in water ?



Answer: A



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8. Phenol is less acidic than _____

A. ethanol

B. o-nitrophenol

C. Methyl phenol

D. o-methoxyphenol

Answer: B



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9. Which of the following is most acidic?

A. Benzyl alcohol

B. Cyclohexanol

C. Phenol

D. m-chlorophenol

Answer: D



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10. Arrange the following compounds in increasing order of boiling point :

Propan-1-ol, butan-1-ol, butan-2-ol, pentan-1-ol

A. Propan-1-ol, butan-2-ol, butan-1-ol, pentan-1-ol

B. Propan-1-ol, butan-1-ol, butan-2-ol, pentan-1-ol

C. Pentan-1-ol, butan-2-ol, butan-1-ol, propan-1-ol

D. Pentan-1-ol, butan-1-ol, butan-2-ol, propan-1-ol

Answer: A



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11. Dehydration of alcohols on give ethers is catalyzed by :

A. Conc. H_2SO_4 at 413 K

B. Conc. H_2SO_4 at 443 K

C. cone H_2SO_4 at 383 K

D. None of these

Answer: A



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12. Dehydration of tertiary alcohols with Cu at 573 K gives:

- A. Aldehydes
- B. ketones
- C. alkenes
- D. None of these

Answer: C



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13. Dehydration of alcohols to give alkenes is catalysed by :

A. Conc. H_2SO_4 at 413 K

B. Conc. H_2SO_4 at 443 K

C. conc. H_2SO_4 at 383K

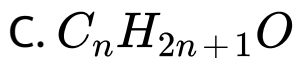
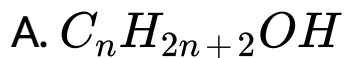
D. None of these

Answer: B



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14. Molecular formula of Ethers is :



D. None of these

Answer: B



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15. Williamsons synthesis is an example of :

A. Nucleophilic substitution reaction

B. Nucleophilic addition

C. Electrophilic substitution

D. None of these

Answer: A



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16. Commercial alcohol is made unfit for drinking by adding

A. methyl alcohol

B. Antimony oxide and acetic acid

C. morphine and adipic acid

D. Snake poison

Answer: A



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17. Reaction used for the preparation of ethers is

A. Reimer-Tiemann reaction

B. Williamson's Synthesis

C. Wurtz reaction

D. Cannizzaro reaction

Answer: B



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18. The test used to distinguish alcohols from one another is known as

A. Hinsberg's test

B. 2,4-DNP test

C. Iodoform test

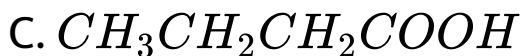
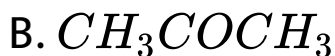
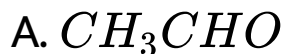
D. Lucas test

Answer: B



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19. Isopropyl alcohol is oxidised with $K_2Cr_2O_7$ and H_2SO_4 to give



Answer: B



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20. Write Reimer Tiemann reaction?



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21. Phenol upon distillation with zinc dust gives :

- A. benzene
- B. benzaldehyde
- C. benzoic acid
- D. benzophenone

Answer: A



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22. Which of the following reagent cannot be used to distinguish between phenol and benzyl alcohol

A. NaOH

B. $NaHCO_3$

C. Br_2 / CCl_4

D. $FeCl_3$

Answer: B



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23. What happens when ethanol is heated with conc. H_2SO_4 at 443k?

A. ethane

B. diethyl ether

C. dimethyl ether

D. ethyl Hydrogen sulphate

Answer: B



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24. Phenol reacts with bromine water in CS_2 at low temperature to give

- A. o-Bromophenol
- B. o-and p-Bromophenol
- C. p-Bromopheno!
- D. 2,4,6-Tribromopheonl

Answer: B



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25. How many optically active stereoisomers are possible for butane -2,3-diol ?

A. 1

B. 2

C. 3

D. 4

Answer: B



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26. Which of following will give Phenol with CaO and NaOH?

A. Salicylic acid

B. Picric acid

C. Benzoic

D. Amino acid

Answer: A



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27. 1-Propanol and 2-Propanol Can be best distinguished by

A. oxidation with alkaline $KMnO_4$

followed by reaction with Fehling

Solution

B. oxidation with acidic dichromate followed by reaction with Fehling Solution

C. oxidation by heating with copper followed by reaction with Fehling solution

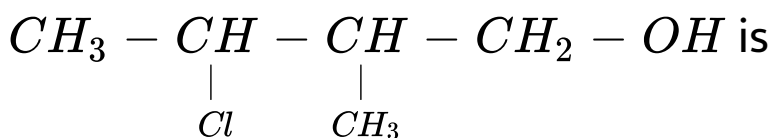
D. oxidation with conc. H_2SO_4 followed by reaction with Fehling Solution.

Answer: C



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28. The correct IUPAC name of the organic compound



- A. 3-chloro-2-methylbutan-1-ol
- B. 2-chloro-3,4-dimethylpentan-5-ol
- C. 2-chloro-3,4-dimethyl-n-peniyyl-1-ol
- D. 2-chloro-3,4-dimethyl-n-pentyl alcohol

Answer: A



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29. Which one of the following phenols has the highest pK_a Value ?

A. o-Nitrophenol

B. Phenol

C. m-Nitrophenol

D. p-Cresol

Answer: D



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30. The major product obtained on interaction of phenol with NaOH and CO_2 is

- A. Benzoic acid
- B. Salicylaldehyde
- C. Salicylic acid
- D. Phthalic acid

Answer: C



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31. The correct order of acidic strength of the following compounds :

I. Phenol II. p-Cresol

III. m-Nitrophenol IV. p-nitrophenol

A. $V > III > I > II$

B. $II > IV > I > III$

C. $I > II > IV > III$

D. $III > II > I > IV$

Answer: A



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

A. Molisch reagent

B. Neutral $FeCl_3$

C. Aqueous NaOH

D. Tollen's reagent

Answer: B



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33. Salicylaldehyde can be prepared from Phenol by



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34. The total number of acyclic Structural isomers possible for compound with molecular $C_4H_{10}O$ is

A. 9

B. 7

C. 5

D. 5

Answer: B



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35. Williamson's Synthesis of preparing dimethyl ether is a/an

A. electrophilic substitution

B. S_N1 reaction

C. electrophilic addition

D. S_N2 reaction

Answer: D



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36. Which of the following alcohols on dehydration with conc. H_2SO_4 give but - 2-ene

A. 2-methyl propan-2-ol

B. Butan-1,2-diol

C. 2-methyl propan-1-ol

D. Butan-2-ol

Answer: D



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37. What type of reactions are represented by

following equation : $\text{CuSO}_4 + \text{Zn} \rightarrow \text{ZnSO}_4 +$

Cu



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38. The product of the following reaction is :

Phenol reacts with conc. Nitric acid and sulphuric acid

- A. O-Nitrophenol
- B. M-Nitrophenol
- C. 2,4-di Nitrophenol
- D. 2,4,6-tri Nitrophenol

Answer: D



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39. Power alcohol is a mixture of

A. 80% petrol+20%benzene+small quantity of ethanol

B. 80% petrol+20% ethanol+small quantity of benzene

C. 80% ethanol+ 20% benzene +small quantity of petrol

D. 50% petrol + 50% Ethanol+ small
quantity of benzene

Answer: B



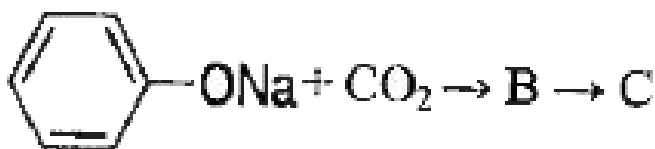
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40. We eat _____ of potato plant.

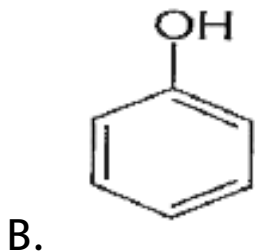
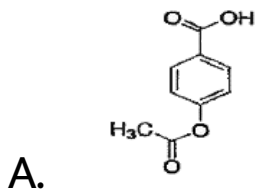


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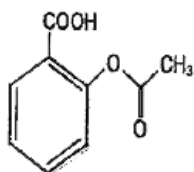
41. Sodium Phenoxide when heated with CO_2 under pressure at 125°C yield a product which on acetylation produces C.



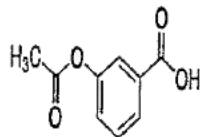
The major product of C would be



C.



D.

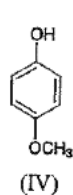
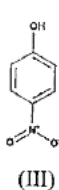
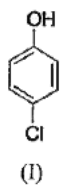


Answer: C



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42. Arrange the following compound in order of decreasing acidity.



A. $IV > III > I > II$

B. $II > IV > I > III$

C. $I > II > III > IV$

D. $III > I > II > IV$

Answer: D



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43. The relative ease of dehydration of alcohols follows the following order :

A. tertiary > secondary > primary

B. primary > secondary > tertiary

C. secondary > tertiary > primary

D. tertiary > primary > secondary

Answer: A



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44. The reaction of Lucas reagent is fast with

A. ethanol

B. methanol

C. 2-propanol

D. 2-methyl-2-propanol

Answer: D



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45. When ethanol is heated with HI and red phosphorus, it gives

A. ethyl iodide

B. ethane

C. ethylene

D. ether

Answer: B



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46. The acid obtained when P_4O_6 reacts with hot water

- A. isopropyl iodide and methyl alcohol
- B. isopropyl alcohol and methyl iodide
- C. isopropyl iodide and water
- D. methyl iodide and water

Answer: B



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47. Define empirical formula and molecular formula ? How are they related to each other ?

A. 1

B. 2

C. 3

D. 4

Answer: A



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48. The process of converting alkyl halides into alcohols involves

- A. addition reaction
- B. substitution reaction
- C. dehydrohalogenation reaction
- D. rearrangement reaction

Answer: B



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49. Arrange the following compounds in increasing order of boiling point:

Propan-1-ol, butan-1-ol, butan-2-ol, pentan-1-ol

A. Propan-1-ol, butan-2-ol, butan-1-ol,
pentan-1-ol

B. Propan-1-ol, butan-1-ol, butan-2-ol,
pentan-1-ol

C. Pentan-1-ol, butan-2-ol, butan-1-ol,
propan-1-ol

D. Pentan-1-ol, butan-1-ol, butan-2-ol,
propan-1-ol

Answer: A



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50. Diethyl ether is decomposed on heating
with



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51. o-nitro phenol is more volatile :

A. due to intramolecular H-bonding

B. due to intermolecular H-bonding

C. Both (a) and (b)

D. none of the above

Answer: A



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52. Acid catalysed hydration of alkene is an example of

A. free radical substitution

B. nucleophilic substitution

C. nucleophilic addition

D. electrophilic addition

Answer: D



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53. The product of acid-catalysed hydration of 2-phenyl propene is

A. 3-phenyl-2-propanol

B. 1-phenyl-2-propanol

C. 2-phenyl-2-propanol

D. 2-phenyl-1-propanol

Answer: C



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54. Which among the following compounds will give a secondary alcohol on reacting with Grignard reagent followed by acid hydrolysis ?

I. HCHO II. C_2H_5CHO III. CH_3COCH_3 IV.

$RCOOC_2H_5$

Select the correct answer using the codes given below:

A. only II

B. only III

C. II and IV

D. III and IV

Answer: A



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55. During dehydration of alcohols to alkenes by heating with conc. H_2SO_4 , the initial step is

A. formation of an ester

B. protonation of alcohol molecule

C. formation of carbocation

D. elimination of water

Answer: B



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

A. Methyl alcohol

B. Glycol

C. Nitro phenol

D. Ethyl alcohol

Answer: B



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57. An unknown alcohol is treated with the "Lucas reagent to determine whether the alcohol is primary, secondary or tertiary. Which alcohol reacts fastest and by what mechanism ?

A. Tertiary alcohol by SN^2

B. Secondary alcohol by SN^2

C. Tertiary alcohol by SN^1

D. Secondary alcohol by SN^1

Answer: C



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58. Iodoform can be prepared from all except

A. isopropyl alcohol

B. 3-methyl-2-butanone

C. isobutyl alcohol

D. ethyl methyl ketone

Answer: C



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59. Ethers are used as solvents. Explain.

A. Acids

B. Bases

C. Oxidising agents

D. Reducing agents

Answer: A



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60. Assertion : Neopenty alcohol on treatment with HCl gives neopentyl chloride.

Reason: Neopentyl is a tertiaryalcohol.

A. If both assertion and reason are true, and reason is the true explanation of the assertion.

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

C. If assertion is true, but reason is false.

D. If both assertion and reason are false.

Answer: D



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61. Statement :1. 2-Pentanol and 3-pentanol cannot be distinguished by iodoform test.

Statement: 2.2-Pentanol and 3-pentanol both are secondary alcohols.

A. Statement 1 is True, Statement : 2 is True,

Statement: 2 is a correct explanation for

Statement 1

B. Statement : 1 is True, Statement : 2 is

True, Statement : 2 is not a correct

explanation for Statement : 1.

C. Statement: 1 is True, Statement : 2 is

False.

D. Statement: 1 is False, Statement :2 is

True.

Answer: D



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62. Explain Lucas test to distinguish between 1° , 2° and 3° alcohols.

A. Statement 1 is True, Statement : 2 is True,

Statement: 2 is a correct explanation for

Statement 1

B. Statement : 1 is True, Statement : 2 is

True, Statement : 2 is not a correct

explanation for Statement : 1.

C. Statement: 1 is True, Statement : 2 is False.

D. Statement: 1 is False, Statement :2 is True.

Answer: C



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63. Name the substance which can be used as an antiseptic as well as disinfectant.

A. Ether

B. Aldehyde

C. Chlorine

D. Phenol

Answer: D



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64. Few people drank some cheap alcohol. Some of them lost their eyesight and a few died. Which alcohol did they drink?

A. Ethanol

B. Methanol

C. Propanol

D. Butanol

Answer: B



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65. Methanol dissolves in water while propanol does not. What is the reason ?

- A. Formation of covalent bonds
- B. Formation of ionic, bonds
- C. Wander vaal forces
- D. Formation of hydrogen bonding

Answer: D



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66. Which alcohol is called wood alcohol?

- A. Pentanol

B. Ethanol

C. Methanol

D. Propanol

Answer: C



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67. Methylated spirit contains 95% of an alcohol. Name the alcohol.

A. Ethyl alcohol

B. Methyl alcohol

C. Propyl alcohol

D. Butyl

Answer: A



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68. Commercial alcohol is made unfit to drink by mixing it with copper sulphate and pyridine. What is the name of this process?

A. Etherification process

B. Etard reaction

C. Williams on synthesis

D. Denaturation of alcohol

Answer: D



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69. A mixture of 20% ethanol and 50% gasoline is called as.

A. Wine

B. Power alcohol

C. Denatured alcohol

D. Absolute alcohol

Answer: B



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70. In a test, alcohol is treated with equimolar mixture of concentrated HCl and anhydrous

Zinc chloride. The solution immediately turned turbid the given alcohol is:

- A. Primary
- B. Secondary
- C. Tertiary
- D. None of these

Answer: C



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71. When alcohol is heated with aqueous NaOH and iodine solution. On warming the mixture yellow ppt appears. This test is called as.

A. Victor Meyertest

B. Lucas test

C. Iodoform test

D. Litmus test

Answer: C



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72. Alcohols react with mono carboxylic acid in presence of concentrated H_2SO_4 as catalyst.

Which new product is formed ?

A. Alcohol

B. Phenol

C. Ester

D. Aldehyde

Answer: C





73. Which type of alcohol cannot be prepared by reduction of carbonyl group aldehydes and ketones

- A. Primary
- B. Tertiary
- C. Secondary
- D. All of these

Answer: B

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74. Victor Meyer test is used to distinguish between different types of

A. Aldehydes

B. Ketones

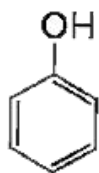
C. Alcohol

D. Esters

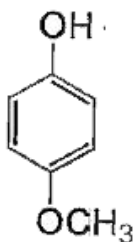
Answer: C

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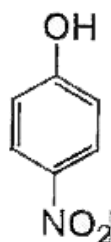
75. Arrange the following in the increasing order of acidic character.



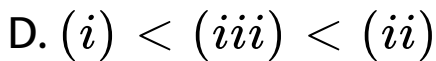
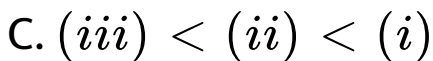
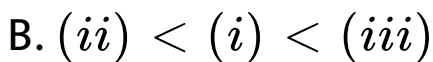
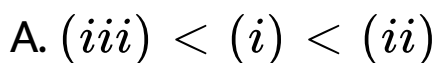
(i)



(ii)



(iii)



Answer: B



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76. Nitration of phenol in the presence of conc.

H_2SO_4 forms

A. o-nitrophenol

B. m-nitrophenol

C. picric acid

D. p-nitrophenol

Answer: C



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77. Name the enzyme which converts sucrose into glucose and fructose.

A. Zymase

B. Urasc

C. Cellbiose

D. Invertase

Answer: D



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78. The amount of bromine required to convert 9.4 g of phenol into 2,4,6-tribromophenol

A. 94 g

B. 4.8 g

C. 16g

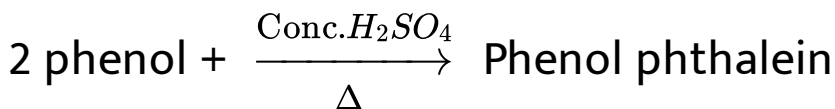
D. 48 g

Answer: D



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79. Phenolphthalein is prepared from phenol by its reaction with



A. Phthalican hydride

B. Phthalic acid

C. Benzoic acid

D. Oxalic acid

Answer: A



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80. Which of following will give Phenol with CaO and NaOH?

- A. Picric acid
- B. Benzoic acid
- C. Salicylic acid
- D. Acetic acid

Answer: C



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81. Write the chemical equation for:

RiemerTiemman reaction for the preparation of salicylic acid.

A. Toluene

B. Benzaldehyde

C. Acetophenone

D. Salicylaldehyde

Answer: D



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82. When phenol is treated with $CHCl_3$ and NaOH, the product formed is

A. Benzaldehyde

B. Benzoic acid

C. Benzene

D. Toluene

Answer: B



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83. Which of the following is most acidic?

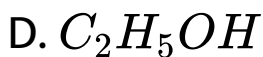
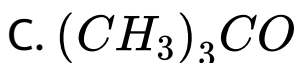
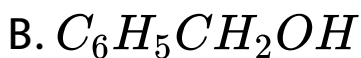
- A. Benzyl alcohol
- B. Phenol
- C. Cyclohexanol
- D. m-chloro phenol

Answer: D



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84. Which of the following compounds will react with sodium hydroxide solution in water ?



Answer: A



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

- A. Tollen's reagent
- B. Molisch reagent
- C. aqueous NaOH
- D. Neutral $FeCl_3$

Answer: D



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86. Which one of the following phenols has the highest pK_a Value ?

- A. o-Nitro phenol
- B. m-Nitro phenol
- C. Picric acid
- D. p-cresol

Answer: D



87. Why Phenols are more acidic than Alcohol ?

- A. phenoxide ion is stabilised by resonance
- B. phenoxide ion does not show resonance
- C. alcohols do not show any acidic property
- D. phenols are soluble in polar solvents

Answer: A



88. Which of the following product is obtained by heating aqueous solution of benzene diazonium chloride ?

A. phenol

B. benzene

C. benzoic acid

D. aniline

Answer: A



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89. What type of reactions are represented by following equation : $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$



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90. What type of reactions are represented by following equation : $\text{CuO} + \text{Mg} \rightarrow \text{MgO} + \text{Cu}$



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91. Which compound is predominantly formed when phenol is allowed to react with bromine in aqueous medium ?

- A. picric acid
- B. o-bromo phenol
- C. 2,4,6-tribromophenol
- D. p-bromo phenol

Answer: C



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92. Benzene diazonium chloride on reaction with phenol in basic medium gives:

- A. chloro benzene
- B. diphenyl ether
- C. p-hydroxyazo benzene
- D. benzene

Answer: C



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93. What type of reactions are represented by following equation : $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$



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94. What type of reactions are represented by following equation : $\text{CuCl}_2 + \text{Pb} \rightarrow \text{PbCl}_2 + \text{Cu}$



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95. What type of reactions are represented by following equation : $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2$



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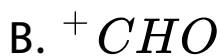
96. What type of reactions are represented by following equation : $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$



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97. The electrophile involved in Reimer - Tiemann reaction of phenol with chloroform in presence of NaOH is:

A. CCl_2



Answer: A



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98. What will be the product on reducing phenol with H_2 in the presence of Ni catalyst

A. benzene

B. cyclohexatie

C. toluene

D. cyclohexanol

Answer: D



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99. What type of reactions are represented by following equation : $\text{Al(OH)}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{H}_2\text{O}$



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100. What type of reactions are represented by following equation : $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$



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101. What type of reactions are represented by following equation : $2\text{KNO}_3 \rightarrow 2\text{KNO}_2 + \text{O}_2$



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102. What type of reactions are represented by

following equation : $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$



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103. What type of reactions are represented by

following equation : $2\text{CO} + \text{O}_2 \rightarrow 2\text{CO}_2$



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104. Name a substance which can be used as an antiseptic as well as disinfectant.

A. Alcohol

B. Ether

C. Phenol

D. Carboxylic acid

Answer: C



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105. Which of the following product is obtained by heating aqueous solution of benzene diazonium chloride ?

A. Aniline

B. Phenol

C. Benzene

D. Chloro benzene

Answer: D



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106. Which is the commercial method for preparation of phenol

- A. Dow's process
- B. From diazonium salt
- C. Hock method
- D. All the above

Answer: C



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107. Name a reagent which will react with cumene to give phenol

A. Oxygen

B. hydrogen

C. Nitrogen

D. Ozone

Answer: A



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108. The P_H value of p-nitrophenol is

A. 5.0

B. 6.2

C. 7.1

D. 8.0

Answer: C



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109. Why Phenols are more acidic than Alcohol ?

A. Phenols are more soluble in polar solvent

B. Phenoxide ion is stabilised by resonance

C. Alcohols do not hydrogen atoms at all

D. None of these

Answer: B



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110. Phenol on reduction with H_2 in the presence of nickel catalyst gives

A. Benzene

B. Toluene

C. Cyclohexane

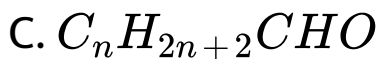
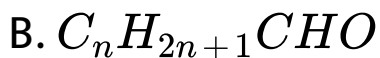
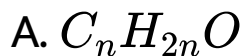
D. Cyclohexanol

Answer: D



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111. The molecular formula of aldehydes is .



Answer: C



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112. Ethers are isomeric with

A. Alcohols

B. Phenols

C. Aldehydes

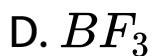
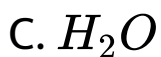
D. Ketones

Answer: A



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113. Ethers have tetrahedral geometry like

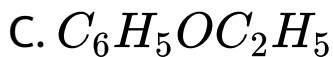
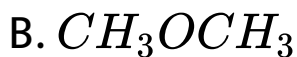
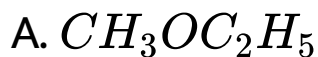


Answer: C



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114. Which of the following is a simple ether?



D. All of these

Answer: B



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115. Ethers are more volatile than alcohols due to

A. H-bonding in alcohols

B. H-bonding in ethers

C. Resonance in alcohols

D. Resonance in ethers

Answer: A



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116. Fill in the blanks- A mixture of salt and sand is separated by the process called_____.



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117. What type of reactions are represented by following equation : $2\text{AgNO}_3 + \text{Cu} \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$



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118. Williamsons synthesis is an example of :

- A. Nucleophilic addition
- B. Electrophilic addition
- C. Nucleophilic substitution
- D. Electrophilic substitution

Answer: C



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119. Give IUPAC name of $CH_3OC_2H_5$

- A. Ethoxy methane
- B. Methoxy ethane
- C. Diethyl ether
- D. Ethyl methyl ether

Answer: D



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120. What type of reactions are represented by following equation : $H_2 + Cl_2 \rightarrow 2HCl$



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121. Dehydration of alcohols on give ethers is catalyzed by :

A. Hot NaOH

B. Conc. H_2SO_4 at 413 K

C. Hot CH_3COOH

D. Hot HNO_3

Answer: B



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122. Diethyl ether $C_2H_5OC_2H_5$ does not react with Na because

A. It does not have any active H attached to oxygen

B. It does not have any active C attached to oxygen

C. Both of these

D. None of these

Answer: A



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123. Ethers on hydrolysis give

A. Carboxylic acid

B. Alcohol

C. Ester

D. Ketone

Answer: B



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124. What type of reactions are represented by

following equation : $AB + CD \rightarrow AD + CB$



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125. What type of reactions are represented by

following equation : $A + BC \rightarrow AC + B$



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126. What type of reactions are represented by

following equation : $A + B \rightarrow C$



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127. What type of reactions are represented by following equation : $X \rightarrow Y + Z$



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128. Diethyl ether finds its use in medicine as

- A. Pain Killer
- B. Hypnotic
- C. Antiseptic
- D. Anaesthetic

Answer: D



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129. Diethyl ether is decomposed on heating with

A. $KMnO_4$

B. Water

C. NaOH

D. HI

Answer: D



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130. Ethers are quite stable towards

A. Oxidizing agents

B. Reducing agents

C. Na Metal

D. All of these

Answer: C



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131. Write word equation and balance equation for the reactions taking place when : dilute hydrochloric acid reacts with zinc granules



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132. Diethyl ether on reaction with CO in specific conditions forms,

A. Acetic acid

B. Carbon dioxide

C. Ethyl Propanoate

D. Acetyl chloride

Answer: C



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133. Write word equation and balance equation for the reactions taking place when :

dilute hydrochloric acid reacts with aluminium powder



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134. Write word equation and balance equation for the reactions taking place when :
dilute hydrochloric acid reacts with magnesium ribbon



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135. Williamson's Synthesis of preparing dimethyl ether is a/an

- A. S_N1 reaction
- B. electrophilic substitution reaction
- C. S_N2 reaction
- D. electrophilic addition reaction

Answer: C



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136. What are strong base.



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137. In the following reaction,



A. Butane

B. Propane

C. Ethane

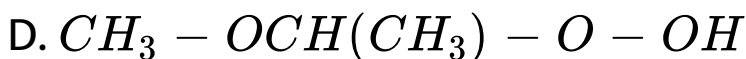
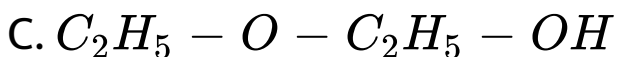
D. Ethylene

Answer: C



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138. Which of the following is obtained by keeping ether in contact with air for a long time?



Answer: A



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

- A. Dipolar character of ethers
- B. Alcohols having resonance structures
- C. Intermolecular hydrogen bonding in ethers

D. Intermolecular hydrogen bonding in
alcohols

Answer: D



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140. Complete and balance equation : $\text{Zn} + \text{HCl}$

→



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141. The boiling point of ethyl alcohol is much higher than that of dimethyl ether though both have the same molecular weight. Why?

A. Ether is insoluble in water

B. Methyl groups are attached to oxygen in ether

C. Dipole moment of ethyl alcohol is less

D. Ethyl alcohol shows hydrogen bonding

Answer: D





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142. Complete and balance equation : $\text{CuO} + \text{HCl} \rightarrow$



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True And False 1 Mark

1. Complete and balance equation : $\text{NaOH} + \text{HCl} \rightarrow$



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2. Complete and balance equation : $\text{Na}_2\text{CO}_3 + \text{HCl} \rightarrow$



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3. Complete the reaction and balance it : $\text{Al} + \text{H}_2\text{SO}_4 \rightarrow$



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4. Sodium ethoxide can be prepared by the reaction of ethanol with aqueous sodium hydroxide.



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5. tert -butyl alcohol is more soluble in water than n- butyl alcohol.



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6. 2,4 dinitrophenol is less acidic than phenol.



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7. Complete the reaction and balance it : $\text{Mg} + \text{H}_2\text{SO}_4 \rightarrow$



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8. Complete the reaction and balance it : $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow$



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9. Phenols turn blue litmus red



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10. Primary alcohols on dehydrogenation give aldehydes.



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11. Phenetol reacts with HI at 373 K to give ethanol and iodobenzene.



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12. Acetone reacts with methyl magnesium bromide followed by hydrolysis to give secondary alcohols.



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13. Growing of plant and ripening of fruits is a _____ change.



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14. Discuss the dehydrogenation of primary, secondary and tertiary alcohols.



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15. Primary alcohols on dehydrogenation give aldehydes.



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3 Mark Questions

1. How will you convert ethanol to ethane ?



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2. How will you convert ethanol to ethanoic acid ?



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3. Complete the following reaction $\text{C}_2\text{H}_5\text{Br} + \text{KCN} \rightarrow$



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4. What is an alcohol? give two examples



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5. Draw structural formula of a primary alcohol having molecular formula C_4H_9OH .



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6. Draw structural formula of secondary alcohol.



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7. Draw structural formula of a tertiary alcohol having molecular formula C_4H_9OH .



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8. What is catalytic dehydrogenation of alcohols ?



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9. How will you prepare Secondary, Tertiary, primary alcohol from Grignard reagent ?



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10. How will you convert Methanol into Ethanol ?



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11. How alcohols react with



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12. How alcohols react with PCl_5



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13. How alcohols react with :





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14. How alcohols react with

(i) Carboxylic acids

(ii) Acid anhydrides

(iii) Acid chlorides



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15. How does phenol react with :

Acid anhydride ?





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16. Discuss the oxidation of alcohols.



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17. Why do alcohols have higher boiling points than halo-alkanes of the same molecular mass ?



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18. Why are alcohols comparatively more soluble in water than the corresponding hydrocarbons ?



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19. Why alcohols are weaker acids than water ?



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20. Discuss the acidic dehydration of alcohols at different temperatures.



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21. Write the reactions of alcohols with :

Sodium



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22. Write the reactions of alcohols with :

HI



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23. Write the reactions of alcohols with:

HCl



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24. Write the reactions of alcohols with:

Sodium hydroxide



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25. Write Victor Meyer's test to distinguish between 1° , 2° and 3° alcohols ?



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26. Discuss the reaction and mechanism of acidic dehydration of ethyl alcohol to prepare ether.



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27. Write two uses of methanol.



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28. Write two uses of ethanol.



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29. Convert the following : 1- Propanol into 2-Propanol.



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30. Why solubility of alcohols in water decreases with increase in molecular mass ?



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31. Why primary alcohols are more acidic than secondary alcohols?



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32. How will you prepare ethanol from :

Ethene.



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33. How can you distinguish primary, secondary and tertiary alcohols by Lucas Test?



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34. What happens when 1° , 2° and 3° alcohols are passed over red hot copper ? Give equations.



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35. What are phenols ?



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36. Write Schotten Baumann reaction.



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37. Explain Reimer Tiemann reaction with one example.



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38. Explain Dow 's process .



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39. What is Kolbe's reaction to prepare salicylic acid ?



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40. How is phenol converted into picric acid ?



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41. Alcohols are easily protonated in comparison to phenols.



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42. Orthonitrophenol and paranitrophenol are more acidic than phenols. Give reasons.



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43. Why phenols are acidic in nature ?



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44. Write short notes on Coupling reaction



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45. How will you convert Phenol to Benzoic acid ?



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46. Why has phenol, higher boiling point than toluene ?



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47. How Phenol is converted to Benzene ?



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48. How does phenol react with

Zinc dust.



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49. Write a test to distinguish alcohols from phenols.



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50. Give the chemical reactions for the preparation of phenol from cumene.



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51. How does the nitration of phenol with dilute nitric acid differ from nitration of phenol with conc, nitric acid in the presence of sulphuric acid?



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52. How will you prepare phenol from (a) Grignard reagent (b) Benzene



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53. How will you prepare phenol from (a) Grignard reagent (b) Benzene



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54. Write short note on Hoffmann's bromamide reaction. Why is it regarded as Hoffmann degradation reaction?



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1. What are ethers ?



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2. How diethyl ether reacts with

HI



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3. Write two uses of ethers.



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4. Why are ethers relatively inert compounds ?



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5. Why di-tertiary butyl ether cannot be prepared by Williamson's synthesis ?



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6. The Boiling Point of ethers are lower than isomeric alcohols why ?



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7. Ethers possess a dipole moment even if the alkyl groups in the molecule are identical. Explain.



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8. How do you account for the miscibility of ethoxy ethane with water.



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9. Give the functional isomer of CH_3CH_2OH .



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10. Explain Williamson's synthesis.



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11. The Boiling Point of ethers are lower than isomeric alcohols why ?



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12. C-O-C bond angle in ethers is higher than H-O-H bond angle in water through O is sp^3 - hybridised in both the cases.



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13. Dimethyl ether is completely soluble in water but diethyl ether is soluble in water to a small extent. Explain.



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14. How diethyl ether reacts with



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15. How diethyl ether reacts with



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16. Phenyl methyl ether reacts with HI to give phenol and methyl iodide and not iodobenzene and methyl alcohol. Explain,



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