



# CHEMISTRY

## BOOKS - MODERN PUBLICATION

### ALCOHOLS, PHENOLS AND ETHERS

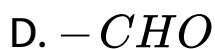
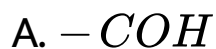
#### Exercise

1. What is the general formula of alcohol.



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2. General formula of primary alcohol is:



**Answer: C**



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3. Alcohols of low molecular weight are :

- A. Soluble in water
- B. Soluble in water are heating
- C. Insoluble in all solvents
- D. Soluble in All solvents

**Answer: A**

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4. Why excessive solubility of lower alcohols in water?

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5. Methanol and ethanol can be distinguished by the following.

A. By reaction with metallic sodium

B. By reaction with caustic soda

C. By heating with iodine and washing soda

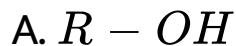
D. By heating with zinc and inorganic mineral acid

**Answer: C**



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6. Which one is obtained by Williamson synthesis?



**Answer: D**



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7. Dehydration of ethanol gives:

A. Acetic acid

B. Ethane

C. Ethylene

D. Acetylene

**Answer: C**



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8. On conversion into the Grignard reagent followed by treatment with absolute ethanol, how

many isomeric alkyl chlorides would yield 2-methylbutane :

A. 2

B. 3

C. 4

D. 5

**Answer: C**



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9. In cold countries, ethylene glycol is added to water in the radiators of cars during winters. It results in:

- A. Lowering of f.pt.,
- B. Reducing the viscosity
- C. Reducing the specific heat
- D. Increasing the conductivity

**Answer: A**



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10. Which alcohol is most acidic:

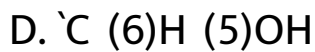
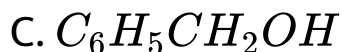
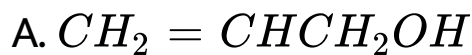
- A. Methanol
- B. Ethanol
- C. Isopropyl alcohol
- D. t-butyl alcohol

**Answer: A**



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11. Which is not an alcohol :



**Answer: D**

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12. A neutral compound gives red colour with ceric ammonium nitrate. Which group is present?

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**13.** The number of isomeric alcohols of formula

$C_4H_{10}O$  is:

A. 2

B. 4

C. 7

D. 8

**Answer: B**



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**14.** Enzymes are :

A. Living organisms

B. Dead organisms

C. Complex nitrogenous substances produced  
from living cells

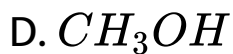
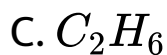
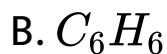
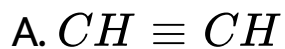
D. none

**Answer: C**



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15. The strongest acid among the following is :

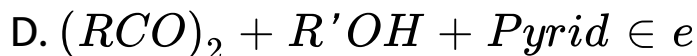
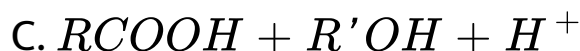
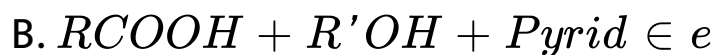


**Answer: D**



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16. Which of the following methods cannot be used for the preparation of an ester:



**Answer: A**



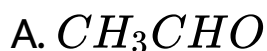
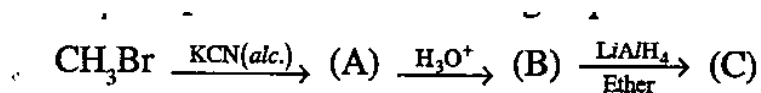
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17. What is Methylated spirit ?



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18. The end product of the following sequence is:

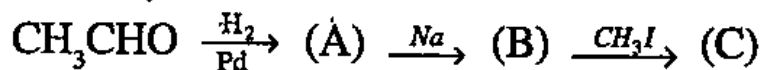


Answer: B



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19. In the following sequence the product (C) is:



A. Alcohol

B. Ether

C. Alkene

D. none



**Answer: B**



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**20.** Scientific aspect of fermentation was first studied by :

- A. Pasteur
- B. Brot
- C. Buchner
- D. Liebig

**Answer: C**



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21. Metal alkoxides contain:

A. metal-carbon Bond

B. metal-oxygen Bond

C. metal-methyl bond

D. none

**Answer: B**



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22. What is the characteristic group of secondary alcohol ?

A.

B.

C.

D.

**Answer: B**



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23. absolute alcohol is prepared from rectified Spirit by:

- A. fractional distillation
- B. steam distillation
- C. azeotropic distillation
- D. vacuum distillation

**Answer: C**



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24. when isopropyl alcohol vapours are passed over heated copper it gives:

- A. acetone
- B. ethyl alcohol
- C. methyl alcohol
- D. acetaldehyde

**Answer: A**



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25. The correct order of the ease with which primary, secondary and tertiary alcohols can be dehydrated using concentrated  $H_2SO_4$  is :

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

**Answer: A**



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26. glycerine is a:

- A. Aldehyde
- B. Carboxylic acid
- C. trihydric alcohol
- D. Ketone

**Answer: C**



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27. glycerol on treatment with oxalic acid at  $110^{\circ}\text{C}$  forms?

A.

B.

C.

D.

**Answer: A**



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**28.** methyl alcohol reacts with Phosphorus trichloride to form?

A.



B.

C.

D.

**Answer: B**



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**29.** Power alcohol is a mixture of petrol and alcohol in the ratio :

A. 4:1

B. 1:4

C. 2:1

D. 1:2

**Answer: A**



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**30.** Ethyl alcohol is denatured by :

A. methanol and formic acid

B.  $KCN$

C.  $CH_3OH$  and  $C_6H_6$

D.  $CH_3OH$  and Pyridine

**Answer: D**



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**31.** For the preparation t-butylmethlether  
Williamson.s method the correct choice of  
reagents is :

A. Methoxide and t-butyl Bromide

B. methanol and 2-bromobutane

C. 2-butanol and Methyl Bromide

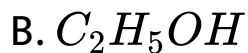
D. t-butoxide and Methyl Bromide

**Answer: D**



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**32.** The organic liquid that mix freely with water is:



**Answer: B**



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33. Butan-2-ol is :

- A. primary alcohol
- B. secondary alcohol
- C. tertiary alcohol
- D. none

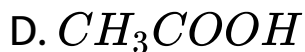
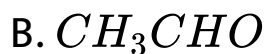
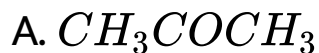
**Answer: B**



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34. Methyl alcohol on oxidation with acidified

$K_2Cr_2O_7$  gives :



**Answer: C**



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35. An organic compound when treated with bleaching powder gave chloroform. The organic compound may be:

A. ethane

B. ethanol

C. ethyne

D. acetic acid

**Answer: B**



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36. Methyl alcohol is \_\_\_\_\_acidic than ethyl alcohol :

A. less

B. more

C. equally

D. none

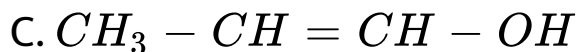
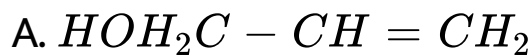
**Answer: B**



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37. Vinyl carbinol is:





D.

**Answer: A**



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**38.** 2 mole of ethanol are burnt. The amount of  $\text{CO}_2$  obtained will be:

A. 132g

B. 44g

C. 176g

D. 88g

**Answer: C**



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**39.** Oxidation of 2-propanol by  $K_2Cr_2O_7$  and dilute  $H_2SO_4$  leads to the formation of:

A. propanal

B. propanoic acid

C. methanoic acid

D. propanone

**Answer: D**



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**40.** An aldehyde is obtained when an alcohol is :

A. oxidized

B. reduced

C. dehydrated

D. hydrogenated

**Answer: A**



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**41.** The reagent used to distinguish propanol -1 and propanol-2

A. ammoniacal silver nitrate

B. fehling's solution

C.  $I_2$  and  $NaOH$

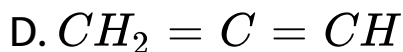
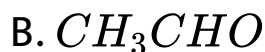
D. schiff's reagent

**Answer: C**



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42. 2-propanol when heated with copper at 570 K yields:

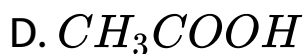
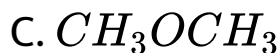
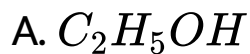


Answer: C



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43. The compound which will not react with sodium is :



Answer: C



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44.  $H_2COHCH_2OH$  on heating with periodic acid forms:



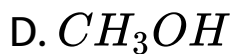
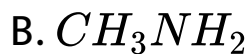
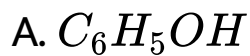
D.

**Answer: B**



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45. Which compound is not an associated liquid:



**Answer: C**



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46. Glycerol can be obtained by reacting  $NaOH$  with

A. fats

B. alcohol

C. Petroleum

D. soap

**Answer: A**



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47. n-propyl alcohol and isopropyl alcohol are:

- A. chain isomers
- B. functional isomer
- C. position isomers
- D. none

**Answer: C**



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48. grain alcohol is the common name of:

A. amyl alcohol

B. ethyl alcohol

C. methanol

D. none

**Answer: B**



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49. when  $Na$  reacts with glycerine it forms:

A. mono-sodium salt

B. di-sodium salt

C. tri-sodium salt

D. all

**Answer: B**



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**50.** A certain compound is a viscous, high boiling point liquid, miscible with water. The compound is most likely to be:

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

B.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$



**Answer: D**



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**51.** The boiling points of the alcohols are higher than the alkanes of corresponding molecular weight because .

A. alcohols can form H-bond with water

B. alkanes are non-polar

C. alcohols are polar

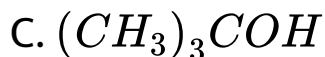
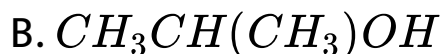
D. alcohols have low densities

**Answer: A**



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**52.** which of the following is a secondary alcohol:

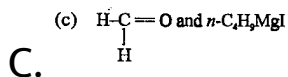
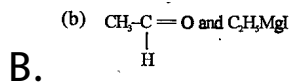
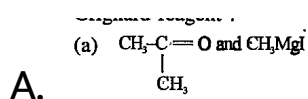


Answer: B



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53. What would be the best starting material for the preparation of tert. Butyl alcohol using Grignard reagent:



D. None

**Answer: A**



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**54.** Which of the following alcohols is most likely to yield 2-methylpropanoic acid.

- A. propan -2 - ol
- B. butan -1 -ol
- C. 2-methylpropan-1-ol
- D. 2-methylpropan-2-ol

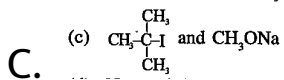
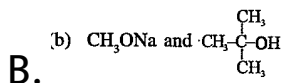
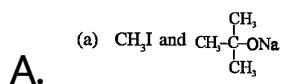
**Answer: C**





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55. A suitable combination of reagents leading to the preparation of tert butyl ether in Williamson's synthesis is :



D. None of the above

Answer: A

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56. How many alcohols and how many ethers are represented by the formula  $C_4H_{10}O$ .

- A. four alcohols and three ethers
- B. four alcohols and three ethers
- C. 2 alcohols and 2 ethers
- D. 3 alcohols and 2 ethers

**Answer: A**

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57. Ethoxyethane (b. pt.  $35^{\circ}C$ ) is more volatile than ethanol (b.pt.  $78^{\circ}C$ ) because of :

- A. the greater relative molecular mass of the Ether
- B. the strength of the  $C - O$  bonds in the Ether
- C. the highly polar  $-OH$  group in ethanol and strong H-bonding
- D. the different shapes of the molecule

**Answer: C**



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**58.** Diethyl ether is extensively used for solvent extraction because of :

A. high solubility of organic compounds in ether

B. high volatility of ether which can be separated from the compounds by distillation

C. both a and b

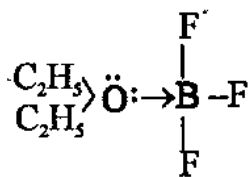
D. none of these

Answer: C

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59. The unshared electrons on the oxygen atom on an ether (basic centre) account for all the following except:

A. Combination like,



B. Formation of oxonium salts with acids such

as,



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**60.** When n-propyl methyl ether is treated with cold

HI:

A. methyl iodide and n propyl alcohol are formed

B. n propyl iodide and methyl alcohol are formed

C.  $CH_3I$  and  $CH_3CH_2CH_2I$  are formed

D. none of these

**Answer: A**



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**61.** Which type of isomerism is most common among ethers?

A.

B.

C.

D.

**Answer: C**



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**62.** Which of the following about breeding is incorrect ?

A.  $\text{C}_2\text{H}_5\text{-}\overset{\text{O}}{\parallel}\text{C-NH}_2$  can be hydrolysed to

$\text{C}_2\text{H}_5\text{COOH}$





B.  $(CN)_2$  can be hydrolysed to

C.  $C_2H_5-O-N\begin{array}{l} \text{O} \\ // \\ \text{O} \end{array}$  can be hydrolysed to

$C_2H_5NH_2$  and  $(NH_3)^+$

D.  $C_2H_5-\underset{\text{H}}{\underset{|}{N}}-\overset{\text{O}}{\underset{||}{C}}-CH_3$  can be hydrolysed to

$C_2H_5NH_2$  and  $C_2H_5COOH$ .

**Answer: C**



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63. An alcohol on oxidation is found to give  $CH_3COOH$  and  $CH_3CH_2COOH$ . Name of alcohol?

A.

B.

C.

D.

**Answer: D**



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64. Isopropyl alcohol on oxidation gives:

A. acetone

B. ether

C. ethylene

D. acetaldehyde

**Answer: A**



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

$(CH_3OH, CH_3COCH_3, CH_3CHO, C_2H_5OH)$

A. methyl alcohol

B. ethyl alcohol

C. acetaldehyde

D. acetone

**Answer: A**



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**66.** When ethyl alcohol is oxidised with  $Cl_2$ , it gives :

A.  $CH_3CHO$

B.  $CH_3COCH_3$

C.  $CH_3COCl$

D.  $COCl_2$

**Answer: A**



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**67.** 3-pentanol is:

A. Aldehyde

B. 2°alcohol

C. Ketone

D. Carboxylic acid

**Answer: B**



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**68.** Whose trivial name is Carbinol?

A.

B.

C.

D.

**Answer: B**



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**69.** Primary , secondary and tertiary alcohols can be distinguished by employing :

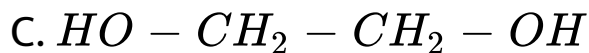
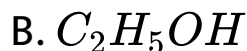
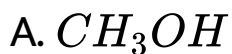
- A. oxidation
- B. Victor Meyer test
- C. Lucas test
- D. all of these

**Answer: D**



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70. Which is most viscous ?



D. none of these

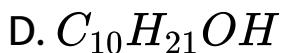
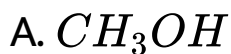
**Answer: C**



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71. Which of the following is least soluble in water ?



**Answer: D**



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72. Lucas test is used for the determination of :

A. alcohols

B. phenols

C. alkylhalides

D. aldehydea

**Answer: A**



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**73.** Compound X reacts with  $PCl_5$  to give Y which on treatment with  $KCN$  followed by propanoic acid as the product what is X?



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

A. 5

B. 4

C. 2

D. 3

**Answer: B**



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75. Why ethanol is soluble in water?

A.

B.

C.

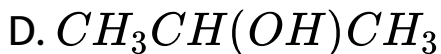
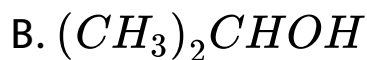
D.

**Answer: B**



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76. Which of the following will form yellow ppt. with an alkaline solution of Iodine:



**Answer: B**



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77. Alcohols are isomeric with

A. acids

B. ethers

C. esters

D. aldehydes

**Answer: B**



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78. sometimes explosion may occur while distilling Ether. Explain

A.

B.

C.

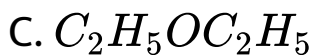
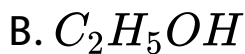
D.

**Answer: C**



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79. Which of the following is used as anaesthetic :



**Answer: D**



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80. Reaction of t-butyl bromide with sodium methoxide produces:

A. isobutane

B. isobutylene

C. sodium t-butoxide

D. t butyl methyl ether

**Answer: B**



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**81.** Primary , secondary and tertiary alcohols can be distinguished by employing :

- A. oxidation
- B. Victor meyer's test
- C. Lucas reagent
- D. all

**Answer: D**



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82. the product formed in the following reaction



are:

A.  $\text{C}_6\text{H}_5\text{OH}$  and  $\text{CH}_3\text{I}$

B.  $\text{C}_6\text{H}_5\text{I}$  and  $\text{CH}_3\text{OH}$

C.  $\text{C}_6\text{H}_5\text{CH}_3$  and  $\text{HOI}$

D.  $\text{C}_6\text{H}_6$  and  $\text{CH}_3\text{OI}$

**Answer: A**



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83. in the reduction,  $R - CHO + H_2 \rightarrow RCH_2OH$

. What is the catalyst used in this reaction?

A.

B.

C.

D.

**Answer: D**



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84. Iodoform test is not given by:

A.  $\text{CH}_3\text{COCl}$

B.  $\text{CH}_3\text{COCH}_2\text{COOC}_2\text{H}_5$

C.  $\text{CH}_3\text{CONH}_2$

D. all

**Answer: D**



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**85.** Widespread deaths due to liquor poisoning occurs due to :

A. presence of lead compounds in liquor

B. presence of methyl alcohol in liquor

C. presence of ethyl alcohol in liquor

D. presence of carbonic acid in liquor

**Answer: D**

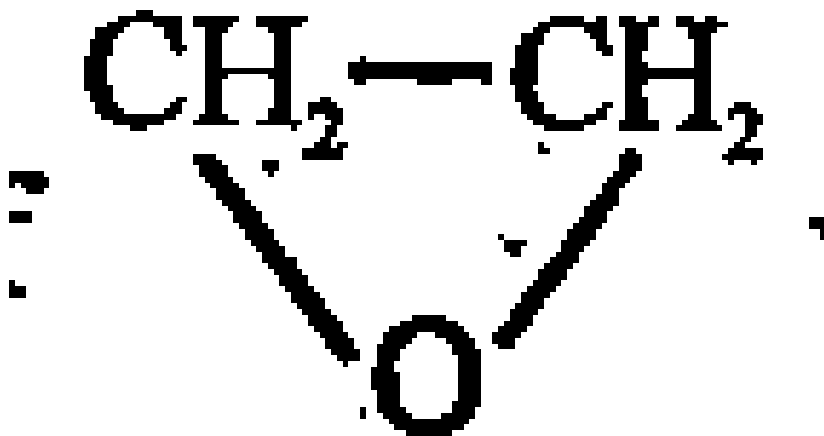


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86.

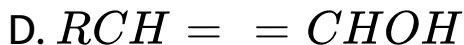
Reaction

of



with

RMgX followed with hydrolysis produces :



**Answer: B**



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**87. Rectified spirit contains :**

A. 75.0 %alcohol

B. 85.5% alcohol

C. 95.6% alcohol

D. 100% alcohol

**Answer: C**



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88. The enzymes are killed :

- A. at a very high temperature
- B. during chemical reaction
- C. under high pressure
- D. in the absence of  $(\text{NH}_4)_3\text{PO}_4$

**Answer: A**



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**89.** Glycerol has :

A. three primary alcoholic groups

B. 3 secondary alcoholic groups

C. one primary alcoholic group and two secondary alcoholic groups

D. two primary alcoholic groups and one secondary alcohol group

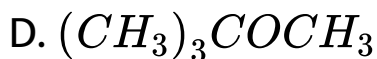
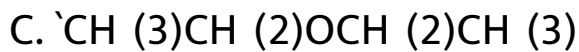
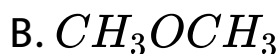
**Answer: D**



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90.  $(CH_3)_3CONa$  on reaction with  $CH_3Br$  will give

:



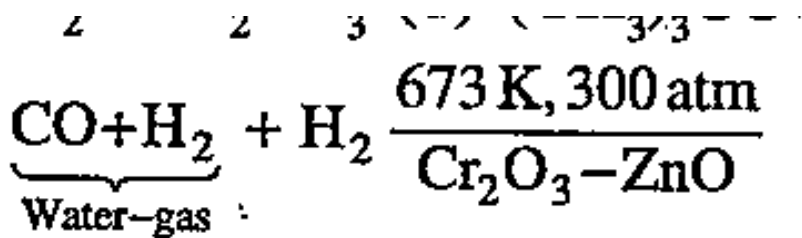
**Answer: D**



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91.

Reaction,



may be

used for the manufacture of:

A.  $\text{HCHO}$

B.  $\text{HCOOH}$

C.  $\text{CH}_3\text{OH}$

D.  $\text{CH}_3\text{COOH}$

**Answer: C**



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**92.** What is the product forms when ethyl alcohol on fermentation with acetobacilli in presence of air?



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**93.** Which organic compound found in wine (alcoholic beverages)?

A.

B.

C.

D.

**Answer: B**



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**94.** What is the main product when 3-methyl-2-butanol on treatment with *HCl*.

A.

B.

C.

D.

**Answer: A**



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**95.** Isopropyl alcohol on oxidation gives:

A. acetone

B. ether

C. ethylene

D. acetaldehyde

**Answer: C**



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96. which one does not give iodoform test?

A. methanol

B. ethanol

C. ethanal

D. acetone

**Answer: A**



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**97.** pentan-3-ol is:

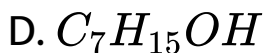
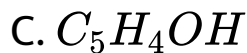
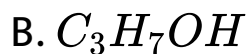
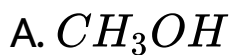
- A. Ketone
- B. 2°alcohol
- C. Carboxylic Acid
- D. Aldehyde

**Answer: B**



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**98.** Which of the following is least soluble in water ?

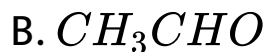


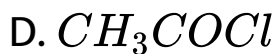
**Answer: D**



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**99.** Methylene chloride on hydrolysis yields:



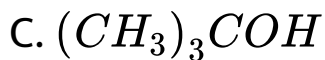
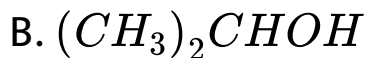
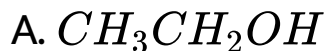


**Answer: A**



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**100.** Conc.HCl reacts rapidly with :

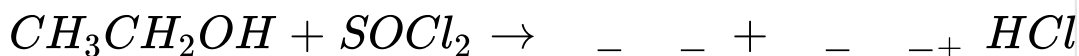


D. all

**Answer: C**

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**101.** complete the following reaction:



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**102.** Ethanol is obtained by..... reaction of acetaldehyde). (oxidation, reduction, polymerisation)

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103. The structural formula of 2-butanol is \_\_\_\_\_.



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104. Ethyl alcohol is oxidised to \_\_\_\_\_ when warmed with acidified  $K_2Cr_2O_7$  solution .



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105. tertiary alcohol is not ordinarily oxidized, but on restrict oxidation, it yields\_\_\_\_ having one\_\_\_\_\_carbon atom.



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106.  $CH_3COCl + C_2H_5OH \rightarrow$  \_\_\_\_\_



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107. Acid chloride on reduction with Lithium Aluminium hydrate gives\_\_\_\_\_



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108. ketones can be prepared by the oxidation of \_\_\_\_\_



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109. Acid chloride react with an \_\_\_\_\_ to form an Ester



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110. Amine have \_\_\_\_\_ boiling points compared to corresponding alcohols

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111. phenol gives violet colouration with \_\_\_\_\_ solution.

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112. Phenyl salicylate is otherwise known as \_\_\_\_\_

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**113.** Phenol is less acidic than:

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**114.** Phenol reacts with mercuric acetate to form \_\_\_\_\_ and \_\_\_\_\_ when heated in presence of \_\_\_\_\_.

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**115.** When phenol is heated with zinc dust, the product is



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116.  $C_6H_5OH$  when dissolved in water gives a solution with pH\_\_\_\_\_.



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117. which of the following is soluble in water? ( $CCl_4$ ,  $C_6H_6$ ,  $CH_3OH$ ,  $C_2H_6$ )



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**118.** Write the structural formula of 3-pentanol.

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**119.** Which of the following compounds will not give iodoform test:

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**120.** Name the alcohol present in pyroligneous acid .

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**121.** Write the name and formula of the ester formed in the reaction of acetyl chloride and methyl alcohol.

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**122.** What happens when propanol-1 is oxidised ?

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**123.** What happens when propanol-2 is oxidised by acidified  $K_2Cr_2O_7$  solution?

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124. What happens when propanaldehyde is reduced by  $H_2 / Ni$ ?

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125. what happens when Acetone is reduced by  $H_2 / Ni$ ?

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126. What happens when aldehyde is reduced ?



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**127.** What happens when a secondary alcohol is oxidised ?



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**128.** What happens when a ketone is reduced ?



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**129.** What happens when ethanol is warmed with acidified  $K_2Cr_2O_7$ ?

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**130.** What happens when ethanol is heated with conc.  $H_2SO_4$  at  $140^\circ C$  ?

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**131.** Which compound has higher boiling point than other :

Pentane or Pentanol ?

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**132.** 1-Hexanol or Hexane which has higher boiling points ?

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**133.** Water acts as an acid in presence of :

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**134.** To produce an ester, an acid has to be reacted upon which reagent ?

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**135.** What is the product formed when ethyl acetate is reduced with Na/alcohol?

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**136.** How is  $K_a$  of phenol compared to that of ethanol.

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**139.** how is phenol prepared from aniline?

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**140.** how will you convert propan-1-ol to propan-2-ol?

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**141.** how will you prepare tert butyl alcohol from acetic acid?

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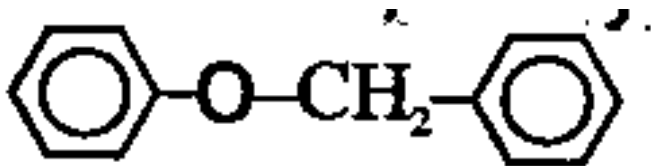
142. how will you distinguish between 1-phenylethanol and 2-phenyl ethanol?

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143. why are ethers relatively inert compounds?

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144. What are the products obtained when

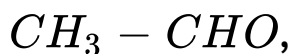


is treated

with HI

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**145.** rearrange the following compounds in the increasing order of their boiling points:



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**146.** How phenol is obtained from chlorobenzene ?

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**147.** What is Schotten-Baumann reaction ?

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**148.** P nitrophenol is more acidic than phenol (true/false)

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**149.** why phenol does not undergo substitution at the OH group like alcohol?



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**150.** how much bromine is needed to produce 2,4,6 tribromophenol from 1 mole of phenol?



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**151.** phenols are acidic than alcohols( true/ false)



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**152.** How will you synthesize salicylic acid from phenol ?

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**153.** What happens when phenol is distilled with zinc dust ?

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**154.** what is the reason for steam volatile behaviour of ortho-nitro-phenol?





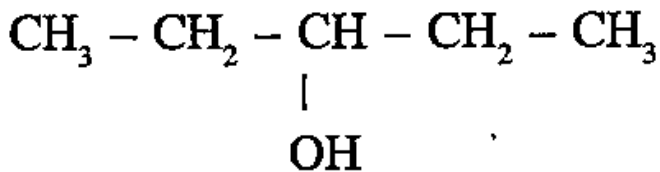
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155. how will you distinguish between 1-phenylethanol and 2-phenyl ethanol?



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156. Write the iupac name of



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**157.** Formylation of phenol is ..... reaction.



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**158.** Why is phenol more acidic than alcohol?



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**159.** What is Reimer-Tiemann reaction?



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**160.** How will you synthesize salicylic acid from phenol ?

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**161.** how are the following conversions carried out?  
ethanol to 2 propanol?

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**162.** phenol to acetophenone?

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**163.** Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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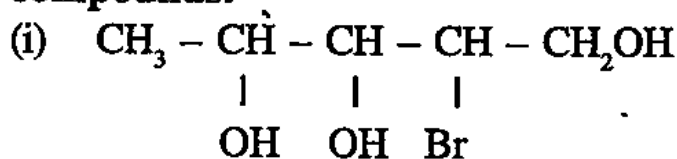
**164.** Which has zero dipole moment?

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165. Write the IUPAC name of the following compound

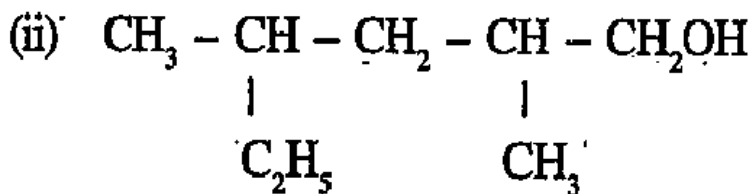
:

compound.



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166. Write the IUPAC name



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**167.** Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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**168.** Formic acid is a stronger acid than acetic acid. Explain

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**169.** Phenol is more acidic than

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**170.** how will you convert propan-1-ol to propan-2-ol?

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**171.** Ethanol is soluble in water due to :

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**172.** Which one among the following is Williamson's synthesis:

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**173.** How will you convert phenol to 2,4,6-tribromo phenol?

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**174.** Give the reaction of phenol with benzene diazonium chloride.





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**175.** How will you convert :Chlorobenzene to toluene  
?



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**176.** Picric acid is



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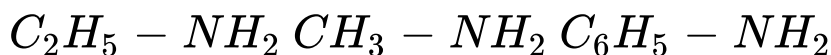
177. How will you convert phenol to 2,4,6-tribromo phenol?

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178. Sulphonation of phenol gives \_\_\_\_\_

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179. Arrange the following amines in the increasing order of their basicity :





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**180.** How phenol is obtained from chlorobenzene ?



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**181.** Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain this fact.



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**182.** Smoking is harmful as it produces polycyclic aromatic hydrocarbons that cause:

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**183.** Explain about the sulphonation of benzene.

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**184.** What happens when halogen reacts with benzene ?

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**185.** Write short note on Huckel's rule ?

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**186.** Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1. \end{cases}$$

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**187.** Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$



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**188.** Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$



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**189.** Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$



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190. Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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191. Write the name and formula of the ester formed in the reaction of acetyl chloride and methyl alcohol.

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**192.** How will you convert acetone into 2-Methyl-2-propanol ?

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**193.** What happens when alcohol is treated with ammonia under pressure in presence of  $Al_2O_3$ ?

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**194.** What happens when ethanol is warmed with acidified  $K_2Cr_2O_7$ ?



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**195.** What is Lucas reagent?



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**196.** Explain, why phenol is acidic, while ethyl alcohol is neutral.



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**197.** How can you prepare phenol by using benzene diazonium chloride ?

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**198.** What happens when phenol is heated with zinc dust ?

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**199.** How can methyl alcohol be converted into ethyl alcohol?



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**200.** How acetic acid is prepared from methyl cyanide?



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**201.** Give a chemical test to distinguish between ethyl alcohol and methyl alcohol.



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202. What happens when acetic acid reacts with ethyl alcohol in presence of conc.  $H_2SO_4$  ?

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203. How can you get ethyl chloride from ethyl alcohol? Give equation.

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204. How ethylene is obtained from ethyl alcohol ?  
Give equation.



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**205.** How different types of alcohols can be tested by Lucas Test ?



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**206.** How can you distinguish between  $1^\circ$ ,  $2^\circ$  and  $3^\circ$  alcohols by Victor Meyer's method ?



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**207.** Explain, why phenol is acidic, while ethyl alcohol is neutral.

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**208.** What is Reimer-Tiemann reaction?

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**209.** Explain why sodium metal can be used for drying diethyl ether but not ethyl alcohol ?

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**210.** Explain esterification of phenol

 [Watch Video Solution](#)

**211.** What happens when phenyl acetate is heated with anhydrous aluminium chloride ?

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**212.** How can methyl alcohol be converted into ethyl alcohol?



214. Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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215. draw the structure of 2,6 -dimethyl phenol

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**216.** how is phenol prepared from aniline?

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**217.** how will you convert propan-1-ol to propan-2-ol?

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**218.** How will you prepare ethyl alcohol from acetaldehyde and ethyl acetate?

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**219.** How is phenol prepared by Dow's process? What happens when phenol is treated with  $Br_2$  in  $CS_2$  at 273K.

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**220.** how will you distinguish between 1-phenylethanol and 2-phenyl ethanol?

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**221.** why are ethers relatively inert compounds?

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222. Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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223. The most suitable method of separation of 1 : 1 mixture of ortho and para nitrophenols is:

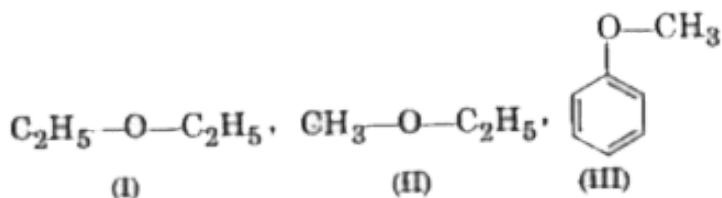


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224. Arrange the following compounds in the decreasing order of their boiling points.



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225. Give an account of nucleophilic substitution reactions in haloarenes?



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**226.** Which of the following cannot be prepared by Williamson synthesis ?

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**227.** How does diethyl ether reacts with

$O_2$

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**228.** How can you prepare alcohol from acetaldehyde without using reducing agent ?

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**229.** The rate law for the reaction,

Ester +  $H^+$   $\rightarrow$  Acid + Alcohol, is given as,

$$\frac{dx}{dt} = k[\text{Ester}][H^+]^0$$

What would be the effect on the rate if concentration of the ester is halved?

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**230.** Which reactions distinguish aldehydes and ketones ?

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**231.** Grignard reagent undergoes :

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**232.** How can you distinguish between primary, secondary and tertiary alcohols? With equation explain how does ethyl alcohol react with (i) acidified

$K_2Cr_{20} - 7$ , solution and(ii) phosphorous pentachloride?

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**233.** During alcoholic fermentation inorganic salts like ammonium phosphate are added :

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**234.** What happens when  $H_2S$  gas is passed through acidified  $K_2Cr_2O_7$  solution ?

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**235.** Isopropyl alcohol on passing over heated copper at  $300^{\circ}C$  gives :

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**236.** The correct order of the ease with which primary, secondary and tertiary alcohols can be dehydrated using concentrated  $H_2SO_4$  is :

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**237.** How can you distinguish between  $1^\circ$ ,  $2^\circ$  and  $3^\circ$  alcohols by Victor Meyer's method ?

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**238.** How is phenol obtained from sodium benzene sulphonate ?

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**239.** What is diazonium salt ? Give its preparation.

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**240.** Discuss nucleophilic and electrophilic reactions of haloarene.

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**241.** How can you prepare phenol from cumene ?

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**242.** Explain the acidic character of phenol.

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**243.** Phenol is more acidic than



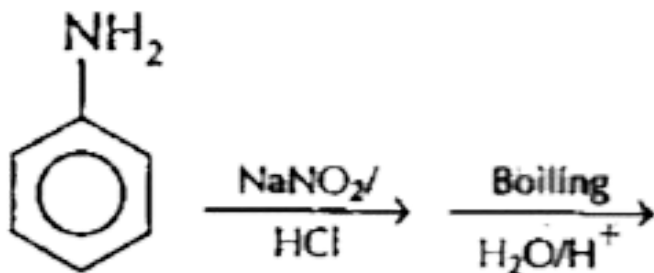
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**244.** Explain the acidic character of phenol.



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245. Complete the following reactions



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246. Sodium nitrate on heating with zinc dust and caustic soda gives

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**247.** Discuss substitution reactions of phenol.

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**248.** Discuss Reimer-Tiemann reaction.

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**249.** Describe the preparation of ether by dehydrogenation of alcohols.

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**250.** Which one is obtained by Williamson synthesis?

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**251.** Explain the cleavage of C-O bond in ether with examples and mechanism.

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**252.** The order of reactivity of benzene, chlorobenzene & phenol towards electrophilic substitution is



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253. Why is phenol more acidic than alcohol?



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254. Give any two methods for the preparation of primary amine. How does it react with



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255. Write reaction and conditions for the conversion of benzyl chloride to benzaldehyde.

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256. How will you convert acetone into 2-Methyl-2-propanol ?

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257. phenol to acetophenone?

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**258.** Butan-2-ol is :



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**259.** Write the names of reagents and equations for the preparation of the following ethers by Williamson's synthesis.

1-propoxy propane



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**260.** Draw the structure and name the product formed if the alcohol are oxidised. Assume that an excess of oxidising agent is used.



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**261.** How will you convert the following

Benzene to aniline

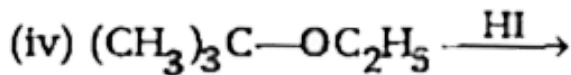
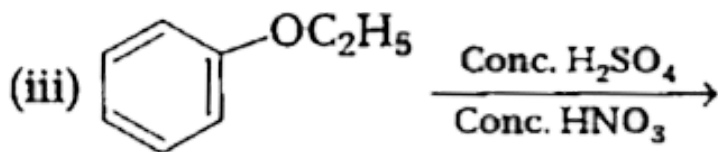


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262. Explain why is ortho-nitrophenol more acidic than ortho-methoxyphenol?

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263. Predict the products of the following reactions :



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264. How will you convert propene to propan-1-ol ?

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265. Write the organic compounds formed in the following reaction



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**266.** Describe the mechanism of acid catalysed dehydration of ethanol to yield ethene.

How will you convert

(i) propene to propan-2-ol?

(ii) phenol to 2, 4, 6-trinitrophenol ?



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267. Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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268. how are the following conversions carried out?

ethanol to 2 propanol?

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**269.** Give a chemical test to distinguish between Isopropyl alcohol & n-propyl alcohol.

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**270.** Write the mechanism of the reaction of HI with methoxy methane.

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**271.** How conversion carried out

Benzyl chloride  $\rightarrow$  Benzyl alcohol



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**272.** Name the reagent in the reaction.

Oxidation of primary alcohol to a carboxylic acid.



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**273.** Dehydration of alcohol involves :



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**274.** How can the following conversion be carried out?

Propene to propan-1-ol



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**275.** Explain the fact that in aryl alkyl ether, the alkoxy group activates the benzene ring towards electrophilic substitution.



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**276.** Explain the mechanism of double fertilization.



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**277.** Phenyl methyl ether reacts with HI to give phenol and methyl iodide and not iodobenzene and methyl alcohol. Why ?



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278. Find  $f(\sqrt{2})$  and  $f(-\sqrt{3})$  for the function

$$f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ x, & \text{if } 0 \leq x \leq 1 \\ \frac{1}{x}, & \text{if } x > 1 \end{cases}$$

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279. How will you prepare phenol from benzene sulphonic acid

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**280.** How can you prepare acetaldehyde from alcohol?

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**281.** Explain the acidic character of phenol.

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