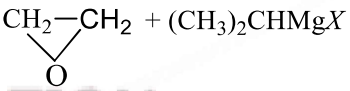
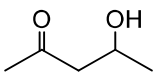
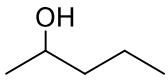
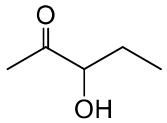
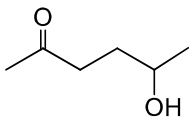
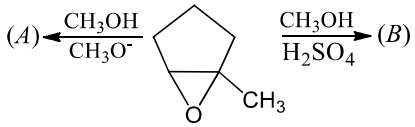
GPLUS EDUCATION

Date :
Time : **CHEMISTRY**
Marks :

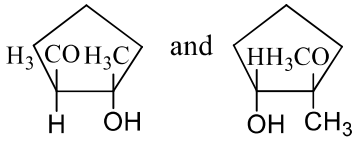
ALCOHOLS, PHENOLS AND ETHERS

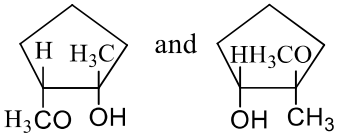
Single Correct Answer Type

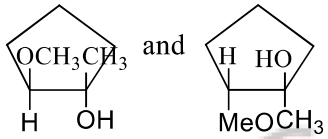
1. An organic compound '*X*' on treatment with pyridinium chloro chromate in dichloromethane gives compound '*Y*'. Compound '*Y*',reacts with I_2 and alkali to form triiodomethane. The compound '*X*' is
   a) C_2H_5OH b) CH_3CHO c) CH_3COCH_3 d) CH_3COOH
2. Ethyl alcohol is industrially prepared from the ethylene by:
   a) Permanganate oxidation
   b) Catalytic reduction
   c) Absorbing in sulphuric acid followed by hydrolysis
   d) Fermentation
3. CH_2ClCH_2OH is stronger acid than CH_3CH_2OH because:
   a) $+IE$ of Cl disperses – ve chare on O –atom to produce more stable anion
   b) $-IE$ of Cl disperses – ve charge on O –atom to produce more stable anion
   c) $+IE$ of Cl increases – ve charge on O –atom to alcohol
   d) None of the above
4. Alcohol $(CH_3)_2CHCH_2OH$ cannot be obtained by
   a) $HCHO + (CH_3)_2CHCH_2MgX$ b) 
   c) $(CH_3)_2CHCH_2CH_2MgX + O_2$ air d) $(CH_3)_2CHCHO + CH_3MgX$
5. Lucas reagent is used to distinguish among primary, secondary and tertiary:
   a) Alkyl halides b) Alcohols c) Aliphatic amines d) Aromatic amines
6. Ketone upon treatment with Grignard reagent gives
   a) Primary alcohol b) Secondary alcohol c) Tertiary alcohol d) Aldehyde
7. The starting material for the preparation of CH_3I in one step reaction is:
   a) CH_3OH b) C_2H_5OH c) CH_3CHO d) CH_3COCH_3
8. From methyl alcohol we get:
   a) Neoprene rubber
   b) Perspex rubber
   c) Bakelite a hard plastic
   d) Sponge rubber
9. Which one of the following will most readily be dehydrated in acidic condition?
   a)  b)  c)  d) 
10. *Tert*-butyl methyl ether on heating with anhydrous HI in ether gives
    a) $CH_3OH + (CH_3)_3CI$ b) $CH_3I + (CH_3)_3COH$ c) $CH_3I + (CH_3)_3Cl$ d) None of the above
11. Diethyl ether is decomposed on heating with:
    a) NaOH b) Water c) $KMnO_4$ d) HI
12. Ether fire can be extinguished by:
    a) Sand b) Pyrene c) CO_2 d) All of these

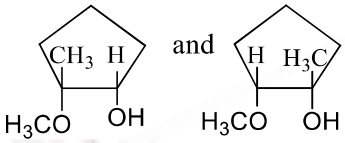
13. Diethyl ether on reaction with CO in specific conditions forms:
    a) Acetic acid b) Carbon dioxide c) Ethyl propanoate d) Acetyl chloride
14. Most viscous among the following is:
    a) Propan-1-ol b) Propan-2-ol c) Propane-1, 2-diol d) Propane-1,2,3-triol
15. In the fermentation of sugar molasses, the percentage of ethanol formed is:
    a) 10 % b) 40 % c) 95 % d) 70 %
16. A liquid was mixed with ethanol and a drop of concentrated H_2SO_4 was added. A compound with a fruity smell was formed. The liquid was:
    a) HCHO b) CH_3COCH_3 c) CH_3COOH d) CH_3OH
17. Ethyl alcohol reacts with following to form a compound of fruity smell:
    a) PCl_5 b) $K_2Cr_2O_7 + H_2SO_4$ c) CH_3COOH d) CH_3COCH_3
18. Carbolic acid is
    a) HCOOH b) CH_3COOH c) C_6H_5COOH d) C_6H_5OH
19. 

    A and *B* are

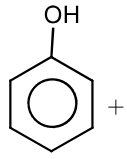
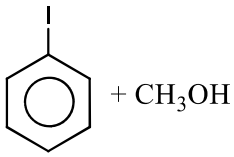
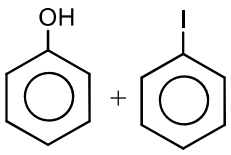
    a) 

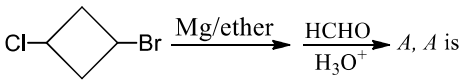
    b) 

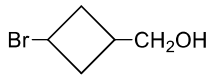
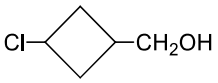
    c) 

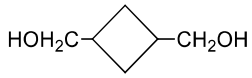
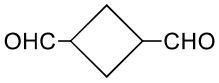
    d) 

20. 2-methyl-2-butanol on treatment with HCl gives predominantly
    a) 2-chloro-3-methylbutane b) 2,2-dimethylpentane
    c) 2-chloro-2-methylbutane d) 1-chloro-2-methylbutane
21. In Williamson's synthesis ethoxy ethane is prepared by
    a) Passing ethanol over heated alumina
    b) Heating sodium ethoxide with ethyl bromide
    c) Treating ethyl alcohol with excess of H_2SO_4 at 430-440 K
    d) Heating ethanol with dry Ag_2O
22. Which of the following reacts fastest with a mixture of anhydrous $ZnCI_2$ and conc. HCI?
    a) Trimethyl carbinol
    b) Ethanol
    c) Propanol
    d) Methanol
23. Ethers are made free from peroxide linkage on distilling impure sample with:
    a) Conc. HNO_3 b) Conc. H_2SO_4 c) Conc. HCl d) None of these
24. Which of the property given below is not associated with glycerol?
    a) Formation of water and CO_2 on reduction
    b) Formation of tartronic acid on oxidation
    c) Formation of acrolein on dehydration
    d) Formation of allyl iodide with PI_3
25. The products obtained when anisole is heated in a sealed tube with HI are

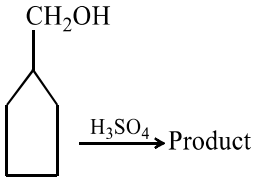
a)  b)  c)  d) $CH_3OH + CH_3I$

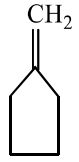
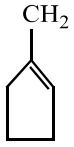
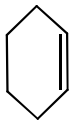
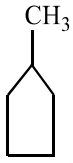
26. 

a)  b) 

c)  d) 

27. The product in the given reaction is:

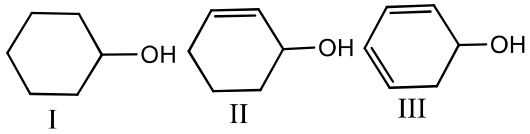


a)  b)  c)  d) 

28. When CH_3MgI is made to react with acetone and the addition product formed is hydrolysed, we get:
a) A primary alcohol b) A secondary alcohol c) A tertiary alcohol d) An aldehyde

29. The factor adversely affecting the process of fermentation is:
a) Low concentration of sugar
b) High concentration of sugars
c) Presence of ammonium salts
d) Presence of air

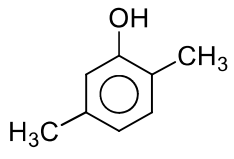
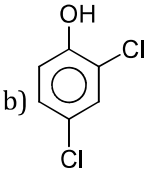
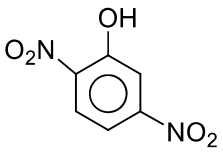
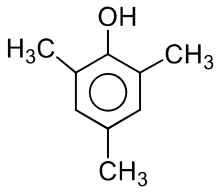
30. The correct order of ease of dehydration of following is



a) I > II > III b) III > II > I c) I > III > II d) III > I > II

31. The correct order of boiling point for primary (1°), secondary (2°) and tertiary (3°)alcohols is
a) 1° > 2° > 3° b) 3° > 2° > 1° c) 2° > 1° > 3° d) 2° > 3° > 1°

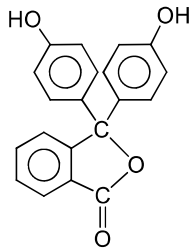
32. Which substance will not react with ϕ NNCl (ϕ = Phenyl) to give dye?

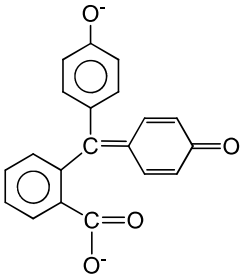
a)  b)  c)  d) 

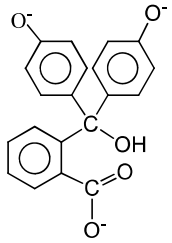
33. Phenol can be distinguished from ethanol by the following reagents except
a) Sodium b) $NaOH/I_2$
c) Neutral $FeCl_3$ d) Br_2/H_2O

34. The compound which does not react with sodium is:
a) $CH_3CHOHCH_3$ b) $CH_3—O—CH_3$ c) CH_3COOH d) C_2H_5OH

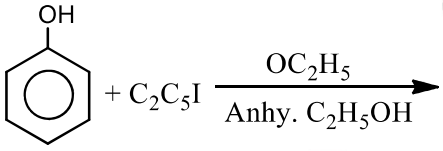
35. Ethylene glycol reacts with excess of PCl_5 to give
    a) 1, 1-dichloroethane
    b) 1, 2-dichloroethane
    c) 1, 1, 1-trichloroethane
    d) 2, 2-dichloroethane
36. Alcohol is sometimes used in:
    a) Baking powder b) Paints c) Thermometers d) Weighing
37. Phenolphthalein is formed by condensation of phthalic anhydride and ϕ OH. Which structure shows colour in basic medium?

a) 

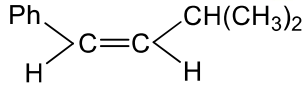
b) 

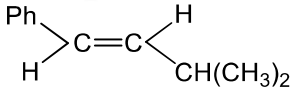
c) 

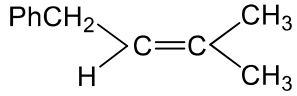
d) All of the above

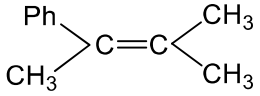
38. 

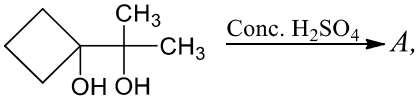
    a) $C_6H_5OC_2H_5$ b) $C_2H_5OC_2H_5$ c) $C_6H_5OC_6H_5$ d) C_6H_5I
39. The major product in the reaction of $PhCH_2CH(OH)CH(CH_3)_2$ with concentrated H_2SO_4 is

a) 

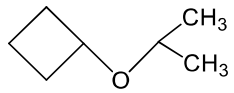
b) 

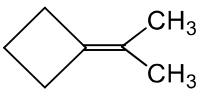
c) 

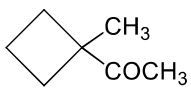
d) 

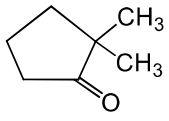
40. Which is not an alcohol?
    a) $CH_2{=}CHCH_2OH$ b) CH_2OHCH_2OH c) $C_6H_5CH_2OH$ d) C_6H_5OH
41. 

    The product *A* is

a) 

b) 

c) 

d) 

42. Glycerol catches fire on mixing with:
    a) $KMnO_4$ b) $K_2Cr_2O_7$ c) HNO_3 d) None of these
43. The end product of the reaction,

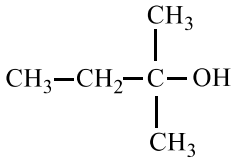
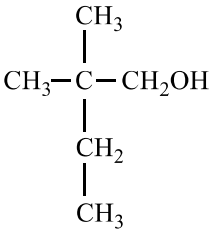
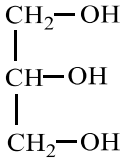
    $CH_3OH \xrightarrow[300^oC]{Cu} A \xrightarrow{NaOH} B$ is :

    a) Alkane

b) Carboxylic acid
c) Sodium salt of carboxylic acid
d) Ketone

44. What is the hybridisation of carbon and oxygen in electronic structure of ether?
a) sp^3 and sp^2 b) sp^3 and sp^3 c) sp and sp d) sp^2 and sp^2

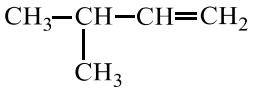
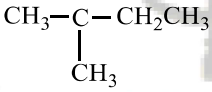
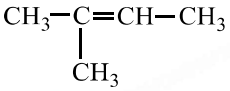
45. During dehydration of alcohols to alkenes by heating with concentrated H_2SO_4 the initiation step is
a) Protonation of alcohol molecule
b) Formation of carbocation
c) Elimination of water
d) Formation of an ester

46. Which of the following is tertiary alcohol?
a) $CH_3—CH_2—OH$ b)  c)  d) 

47. Which of the following reagent will convert glycerol to acrolein?
a) P_2O_5 b) Conc.H_2SO_4 c) $KHSO_4$ d) All of these

48. Among the following, which is least acidic?
a) Phenol b) *o*-cresol c) *p*-nitrophenol d) *p*-chlorophenol

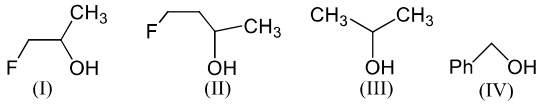
49. Glycerol on heating with oxalic acid at 110°C gives
a) Ethanol b) Methanoic acid c) Ether d) Acetone

50. The dehydration of neo-pentanol gives mainly:
a)  b)  c)  d) None of the above

51. Phenol, when it first reacts with concentrated sulphuric acid and then with concentrated nitric acid, gives
a) 2, 4, 6-trinitrobenzene b) *o*-nitrophenol
c) *p*-nitrophenol d) Nitrobenzene

52. Which of the following is dihydric alcohol?
a) Glycerol b) Ethylene glycol c) Catechol d) Resorcinol

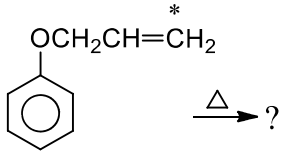
53. Absolute alcohol contains:
a) 40% H_2O b) 10% H_2O c) 5% H_2O d) 100% C_2H_5OH

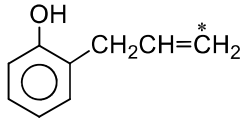
54. The order of reactivity of the following alcohols

(I) (II) (III) (IV)
a) I > *II* > *III* > *IV* b) I > *III* > *II* > *IV* c) IV > *III* > *II* > *I* d) IV > *III* > *I* > *II*

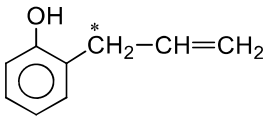
55. The most important ingredient of dynamite is:
a) Nitrobenzene b) Glycerine trinitrate c) Nitroaniline d) Nitrosobenzene

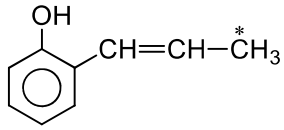
56. 2-methoxy butane is obtained by reacting diazomethane with
a) 2-butanol b) 1-butanol c) 2-butanone d) Butanal

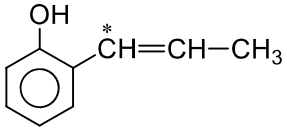
57. How many structural isomers are known for $C_4H_{10}O$?
a) 4 b) 3 c) 6 d) 7

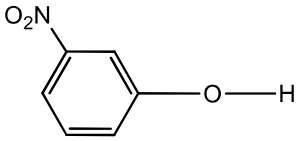
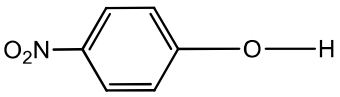
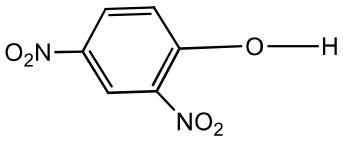
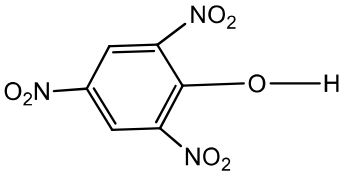
58. 
Product is

a) 

b) 

c) 

d) 

59. Amongst the following, HBr reacts fastest with
    a) Propane-1-ol
    b) Propane-2-ol
    c) 2-methyl propane-1-ol
    d) 2-methyl propane-2-ol
60. Physical properties of:
    a) Alcohols lie between alkanes and H_2O
    b) H_2O lie between alcohols and alkenes
    c) Alkenes lie between alcohols and H_2O
    d) None of the above
61. Which of the following ethers form peroxide readily?
    a) Me—O—Me b) Et—O—Et c) iPr—O— iPr d) Me— O— Et
62. Association of alcohol molecules takes place because of:
    a) Electrovalent bond b) Ionic bond c) Covalent bond d) Hydrogen bond
63. The reaction, $2CH_3CH_2\dot{O}H \xrightarrow[413\ K]{H^+} CH_3CH_2OCH_2CH_3$ is believed to occur through the formation of
    a) $CH_3CH_2\overset{+}{O}H_2$
    b) $CH_3\overset{+}{C}H_2$
    c) $CH_3CH_2-\overset{+}{\underset{\vdots}{\underset{H}{O}}}-CH_2CH_3$
    d) Both (b) and (c)
64. Ethyl iodide on treatment with dry Ag_2O will yield:
    a) Ethyl alcohol b) Diethyl ether c) Ethyl methyl ether d) Ethylene
65. Which of the following compounds is weakest acid?
    a) 
    b) 
    c) 
    d) 
66. Fusel oil is a mixture of:
    a) Alcohols b) Ethers c) Ethers and alcohols d) Alcohols and acetone
67. When benzene sulphonic acid and *p*-nitrophenol are treated with $NaHCO_3$, the gases released respectively are
    a) SO_2, NO_2 b) SO_2, NO c) SO_2, CO_2 d) CO_2, CO_2
68. Which is correctly matched?

	Alcohol	**α -H**	**β-H**	**Colour in Victor Meyer test**
A.	*X*	3	0	Colourless
B.	*Y*			Blue

		1	6	
C.	*Z*	0	9	Red

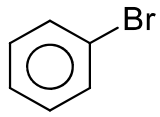
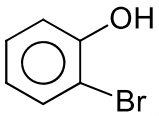
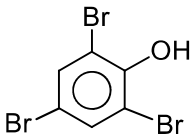
a) *A* and *B*
b) *B* and *C*
c) Only *C*
d) Only *B*

69. Lucas reagent is
a) Conc. HCI and anhydrous $ZnCl_2$
b) Conc. HNO_3 and hydrous $ZnCl_2$
c) Conc. HCI and hydrous $ZnCl_2$
d) Conc. HNO_3 and anhydrous $ZnCl_2$

70. An aldehyde on treatment with Zn/HCl yields:
a) 1° alcohol
b) 2° alcohol
c) 3° alcohol
d) None of these

71. In the reaction,
$A \xrightarrow[H_2SO_4]{K_2Cr_2O_7}$ acetone $\xrightarrow{\text{Oxidation}}$ acetic acid, *A* is
a) 1-propanol
b) 2-butanol
c) 2-propanol
d) Ethanol

72. When glycerol is treated with excess of HI, it produces:
a) 2-iodopropane
b) Allyl iodide
c) Propene
d) Glycerol tri-iodide

73. The product obtained by the reaction of HBr with phenol is
a) 
b) 
c) 
d) There is no reaction

74. 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

75. Glycol condenses with ketones to give:
a) Cyclic acetals
b) Cyclic ketals
c) Acetaldehyde
d) Oxalic acid

76. In the following reaction sequence
$R-OH \xrightarrow{P+I_2} R-I \xrightarrow{AgNO_2} RNO_2 \xrightarrow{HNO_2}$ no reaction The alcohol is a
a) Primary alcohol
b) Secondary alcohol
c) Tertiary alcohol
d) Phenol

77. The explosive nitroglycerine is:
a) A soap
b) A salt
c) An ester
d) A complex compound

78. The compound $CH_3CH_2CH_2Br$ is converted into $CH_3CH_2CH_2OH$ by:
a) Dehydration
b) Hydrogenation
c) Elimination
d) Substitution

79. Consider the following reaction,
ethanol $\xrightarrow{PBr_3} X \xrightarrow{\text{alc. KOH}}$

$$Y \xrightarrow[\text{(ii) } H_2O,\text{ heat}]{\text{(i) } H_2SO_4 \text{ at room temperature}} Z;$$

The product *Z* is:
a) CH_3CH_2OH
b) $CH_2{=}CH_2$
c) $CH_3CH_2{-}O{-}CH_2{-}CH_3$
d) $CH_3{-}CH_2{-}O{-}SO_3H$

80. Glycerol reacts with potassium bisulphate to produce
a) Allyl iodide
b) Allyl sulphate
c) Acryl aldehyde
d) Glycerol trisulphate

81. To prepare an ether by Williamson's synthesis, the reactants needed are
a) Ethyl alcohol and tert butyl alcohol
b) Sodium ethoxide and tert butyl bromide

c) Sodium tertiary butoxide and ethyl bromide
d) Sodium ethoxide and sodium tert butoxide

82. Fenton's reagent is:
a) $H_2O + FeSO_4$ b) $H_2O_2 + FeSO_4$ c) $H_2O_2 + ZnSO_4$ d) $NaOH + FeSO_4$

83. Which of the following is simple ether?
a) $C_6H_5OCH_3$ b) $CH_3OC_2H_5$ c) nPrOEt d) MeOMe

84. The number of methoxy groups in a compound can be determined by treating it with:
a) HI and $AgNO_3$ b) Sodium carbonate c) Sodium hydroxide d) Acetic acid

85. When C_2H_5OH is mixed with ammonia and passed over heated alumina, the compound formed is:
a) $C_2H_5NH_2$ b) C_2H_4 c) $C_2H_5OC_2H_5$ d) CH_3OCH_3

86. If there be a compound of the formula $CH_3C(OH)_3$, which one of the following compounds would be obtained form it without treatment with any reagent?
a) Methanol b) Ethanol c) Acetic acid d) Formaldehyde

87. In Lucas test an alcohol reacts immediately and gives insoluble chloride. The alcohol is
a) CH_3OH b) CH_3CH_2OH c) $(CH_3)_2CHOH$ d) $(CH_3)_3COH$

88. $(CH_3)_3CONa$ on reaction with CH_3Br will give:
a) $(CH_3)_3COC(CH_3)_3$ b) CH_3OCH_3 c) $CH_3CH_2OCH_2CH_3$ d) $(CH_3)_3COCH_3$

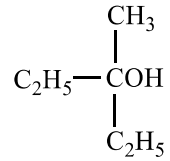
89. Which one has highest boiling point?
a) Ethane b) Butane c) Butan-1-ol d) Pentane

90. Glyoxal is:
a) $CH_2OH—CHO$ b) $CH_2=OH$ c) CHO—CHO d) $CH_2=CHCHO$

91. Methylated spirit is:
a) Methanol containing some pyridine
b) Ethanol containing some methanol
c) Pure methanol
d) 95% methanol

92. Dehydrogenation of 2-butanol gives:
a) 2-butene b) Butanone c) Butyraldehyde d) 1-butene

93. The density of glycerol is higher than propanol due to
a) Van der Waals' attraction b) Hydrogen bonding
c) Ionic bonding d) More number of covalent bonds

94. Ethyl acetate is treated with double the molar quantity of C_2H_5MgBr and the reaction mixture is hydrolysed with water. The product is:
a) C_2H_5OH b) $(C_2H_5)_2CHOH$ c)  d) $CH_3COOC_2H_5$

95. The correct order of decreasing acidity of nitrophenols will be
a) *m*-nitrophenol > *p*-nitrophenol > *o*-nitrophenol
b) *o*-nitrophenol > *m*-nitrophenol > *p*-nitrophenol
c) *p*-nitrophenol > *m*-nitrophenol > *o*-nitrophenol
d) *p*-nitrophenol > *o*-nitrophenol > *m*-nitrophenol

96. The reaction of $CH_3OC_2H_5$ with HI gives:
a) CH_3I only b) C_2H_5OH only c) $CH_3I + C_2H_5OH$ d) $C_2H_5I + CH_3OH$

97. Glycerol has:
a) 3 primary alcoholic groups
b) 3 secondary alcoholic groups
c) 1 primary alcoholic group and 2 secondary alcoholic groups
d) 2 primary alcoholic groups and 1 secondary alcoholic group

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

a) Intermolecular hydrogen bonding in alcohols
b) Dipolar character of ethers
c) Alcohols having resonance structures
d) Intermolecular hydrogen bonding in ether

99. When phenol is heated with phthalic anhydride and H_2SO_4, it produces
a) Phenol red b) Methyl orange c) Salicylic acid d) Phenolphthalein

100. When ethyl alcohol is dissolved in water, it is accompanied with:
a) Absorption of heat and contraction in volume
b) Evolution of heat and contraction in volume
c) Absorption of heat and increase in volume
d) Evolution of heat and increase in volume

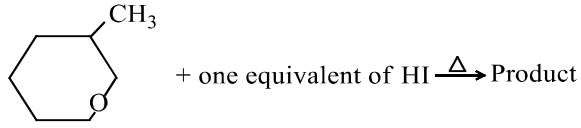
101. The products obtained when benzyl phenyl ether is heated with HI in the mole ratio 1:1 are
I. Phenol
II. Benzyl alcohol
III. Benzyl iodide
IV. Iodobenzene
a) 1 and 3 only b) 3 and 4 only c) 1 and 4 only d) 2 and 4 only

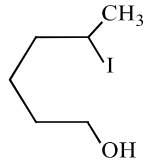
102. Which of the following is an example of elimination reaction?
a) Chlorination of CH_4
b) Dehydration of C_2H_5OH
c) Nitration of benzene
d) Hydroxylation of C_2H_4

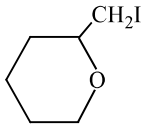
103. Glycerol on oxidation with conc. HNO_3 mainly yields:
a) Glyceric acid b) Tartronic acid c) Mesoxalic acid d) Both (a) and (b)

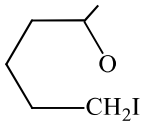
104. During fermentation little H_2SO_4 is added:
a) To get acidic medium
b) To hydrolyse the glucose solution
c) To prevent the growth of undesirable bacteria
d) Which acts as dehydrating agent

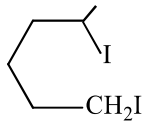
105. The principal organic product in the reaction is:



a) 

b) 

c) 

d) 

106. Dialkyl sulphides are known as:
a) Sulphonal b) Mercaptan c) Thioethers d) Thioesters

107. Acrolein is obtained when glycerol is dehydrated with:
a) $KHSO_4$ b) P_2O_5 c) Conc. H_2SO_4 d) All of these

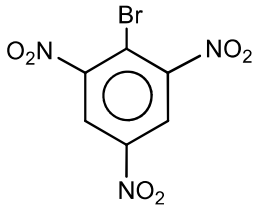
108. In the following reaction, X and Y respectively are

$$C_2H_5OH \xrightarrow{KMnO_4/H^+} X \xrightarrow[H_2SO_4/\Delta]{Y} CH_3CO_2C_2H_5$$

a) CH_3OH, C_2H_5OH b) CH_3CHO, CH_3OH c) CH_3CO_2H, C_2H_5OH d) C_2H_4, CH_3CO_2H

109. The compound which gives turbidity immediately with Lucas reagent at room temperature is
a) Butan-1-ol b) Butan-2-ol
c) 2-methyl propan-2-ol d) 2-methyl propan-1-ol

110. Which of the following will not react with NaOH?

a) 

b) C_2H_5OH c) CH_3CONH_2 d) $CH(CN)_3$

111. The alcohol manufactured from water gas is
a) CH_3OH b) C_2H_5OH c) CH_3CH_2COOH d) $(CH_3)_2CHOH$

112. The – OH group of an alcohol or the – COOH group of a carboxylic acid can be replaced by – CI using
a) Phosphorus pentachloride b) Hypochlorus acid
c) Chlorine d) Hydrochloric acid

113. Methanol cannot be dried with anhydrous $CaCI_2$ because
a) $CaCI_2$ dissolves in it b) It is not good dehydrating agent
c) It forms a solid $CaCI_2.4CH_3OH$ d) It reacts with CH_3OH

114. Sodium ethoxide has reacted with ethyanoyl chloride. The compound that is produced in the above reaction is:
a) Diethyl ether b) 2-Butanone c) Ethyl chloride d) Ethyl ethanoate

115. Which method is employed to convert alkyl halide into alcohol?
a) Substitution b) Addition c) Dehydration d) Rearrangement

116. Lucas test is associated with
a) Aldehydes b) Phenols c) Carboxylic acids d) Alcohols

117. $C_2H_6 \xrightarrow[350\ K]{H_2SO_4} A \xrightarrow[Fusion]{Alkali} B \xrightarrow[H_2O]{Br} C$
In the above sequence, C is
a) *o*-bromophenol b) *p*-bromophenol
c) *m*-bromophenol d) 2, 4, 6-tribromophenol

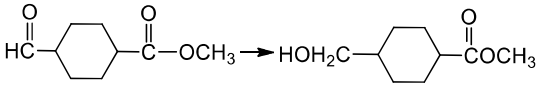
118. The boiling points of thio-ethers are…than those of ether.
a) Lesser b) Equal c) Higher d) None of these

119. $B \xleftarrow{PCl_5} C_2H_5OH \xrightarrow{Na} A$
$A + B \rightarrow C$
$C \xrightarrow[BF_3]{CO} D$

In the above sequence D is
a) $CH_3COOC_2H_5$ b) CH_3COOCH_3 c) $C_2H_5COOC_2H_5$ d) $(C_2H_5)_2O \rightarrow BF_3$

120. The toxicity order for CH_3OH, C_2H_5OH and C_3H_7OH is:
a) $C_2H_5OH < CH_3OH < C_3H_7OH$
b) $C_3H_7OH < C_2H_5OH < CH_3OH$
c) $C_2H_5OH < C_3H_7OH < CH_3OH$
d) $CH_3OH < C_2H_5OH < C_3H_7OH$

121. The alcohol that forms fats with fatty acids is:
a) Glycerol b) Ethanol c) Methanol d) Glycol

122. The reduction,


Can be achieved by using
a) $NaBH_4$ b) $LiAlH_4$
c) $CuO \cdot CuCN_2O_4$ d) None of these

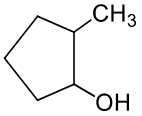
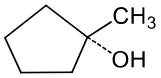
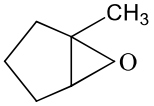
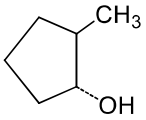
123. Williamson's synthesis is used for the preparation of
a) Acid b) Ester c) Ether d) Alcohol

124. Fermentation of starch solution to ethyl alcohol does not require:
a) Diastase b) Invertase c) Maltase d) Zymase

125. Wood spirit is:
a) CH_3OH b) C_2H_5OH c) $CH_3CH_2CH_2OH$ d) None of these

126. Which of the following reagents can convert acetic acid into ethanol?
a) Sn + HCl b) H_2 + Pt c) $LiAlH_4$ +ether d) Na + alcohol

127. By heating phenol with chloroform in alkali, it is converted into
a) Salicylic acid b) Salicyladehyde c) Anisole d) Phenyl benzoate

128. The major product during hydroboration-oxidation of 1-methylcyclopentene is
a) 
b) 
c) 
d) 

129. Carbinol is the trivial name for:
a) $(CH_3)_3COH$ b) C_2H_5OH c) CH_3OH d) $CH_3CH_2CHOHCH_3$

130. When acetamide is treated with $LiAlH_4$…….is formed.
a) Ethanol b) Acetic acid c) Formic acid d) Methanol

131. Which of the following is used as antiseptic?
a) C_2H_5OH b) Iodoform c) Both (a) and (b) d) None of these

132. Proof spirit contains about:
a) 48% alcohol by weight
b) 10% alcohol by weight
c) 5% alcohol by weight
d) 90% alcohol by weight

133. A simple method to remove peroxides from ethes is to treat them with an aqueous solution of
a) KI b) KCNS c) $Na_2S_2O_3$ d) Br_2

134. Isopropyl alcohol and n-propyl alcohol are:
a) Position isomers b) Chain isomers c) Functional isomers d) None of these

135. Which one of the following is not the characteristics of the alcohols?
a) Their boiling points rise fairly uniformly with a rise in molecular weight
b) Lower members have a pleasant smell but burning taste and the higher ones are odourless and tasteless
c) There are lighter than water
d) Lower members are insoluble in water and organic solvents but the solubility goes on increasing with the rise of molecular weight

136. Primary amine on treatment with $NaNO_2$ and HCl yields:
a) Nitro compound b) Ammonia c) Secondary alcohol d) Primary alcohol

137. Diethyl ether on treatment with Cl_2 in presence of sunlight gives:
a) Trichlorodiethyl ether
b) Perchlorodiethyl ether
c) Trichloroacetaldehyde
d) 1,1-dichlorodiethyl ether

138. $CH_3 - CH_2 - O - CH_2 - CH_3$ reacts with hot and excess HI, then formed product is
a) $CH_3 - CH_2 - I$ and CH_3CH_2OH b) $CH_3 - CH_2 - OH$
c) $CH_3 - CH_2 - I$ d) None of the above

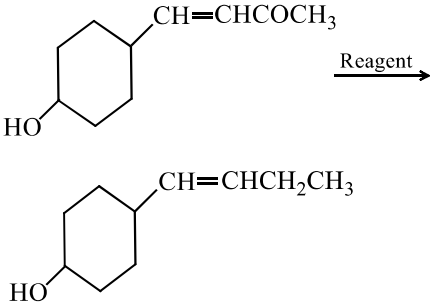
139. A mixture of alcohol and ether is called:
a) Natalite b) Power alcohol c) Peroxide d) None of these

140. Phenol $\xrightarrow[2.CO_2/140°C]{1.NaOH} A \xrightarrow{H^+/H_2O} B \xrightarrow{Ac_2O} C$
In this reaction, the end product C is
a) Salicylaldehyde b) Salicylic acid c) Phenyl acetate d) Aspirin

141. In fermentation by zymase, alcohol and CO_2 are obtained from
a) Invert sugar b) Glucose c) Fructose d) All of these

142. Oxidation of allyl alcohol, (CH_2=CH—CH_2OH) gives a mixture of oxalic acid and formic acid. If this oxidation is done in presence of bromine. One would expect only:
a) Oxalic acid b) Formic acid c) Succinic acid d) Acrylic acid

143. In the given transformation, which of the following is the most appropriate reagent?



a) $Zn - Hg/HCl$ b) $\overset{Na,\ Liq.\ NH_3}{(v)}$ c) $NaBH_4$ d) NH_2NH_2, OH

144. Glycerol is highly viscous. It is due to the fact that:
a) It is highly polar
b) It forms extensive H-bonding
c) It shows intramolecular H-bonding
d) It has high b.p.

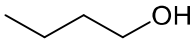
145. The best method to prepare cyclohexene from cyclohexanol is by using
a) Conc. $HCI + ZnCI_2$ b) Conc. H_3PO_4 c) HBr d) Conc. HCI

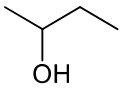
146. Phenol on treatment with diethyl sulphate in presence of NaOH gives
a) Phenetole b) Anisole c) Diphenyl ether d) Diethyl ether

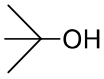
147. Vapours of an alcohol were passed over hot reduced copper. It gave an olefin. The alcohol is:
a) Primary b) Secondary c) Tertiary d) None of these

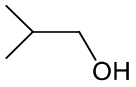
148. Propane, $CH_3—CH = CH_2$ can be converted into 1-propanol by oxidation. Which set of reagents among the following is ideal to effect the conversion?
a) H_2O b) B_2H_6, H_2O_2 c) H_2SO_4 d) None of these

149. $C_4H_{10}O$ gives white precipitate within 5 min with concentrated hydrochloric acid in the presence of amhydrous zinc chloride.
Alcohol can be

a) 

b) 

c) 

d) 

150. Propan-2-ol on reacting with Cl_2 produces:
a) Trichloroethanal b) Trichloroacetone c) Acetone d) None of these

151. Which of the following compounds is resistant to nucleophilic attack by hydroxyl ions?
a) Acetamide b) Methyl acetate c) Diethyl ether d) Acetonitrile

152. Ethers are quite stable towards:
a) Oxidizing agents b) Reducing agents c) Na metal d) All of these

153. The function of $ZnCI_2$ in Lucas test for alcohols is
a) To act as acid catalyst and react with HCI to form H_2ZnCI_4
b) To act as base catalyst and react with NaOH to form$Na_2Zn(OH)_4$
c) To act as amphoteric catalyst
d) To act as neutral catalyst

154. When ethyl alcohol is heated with conc.H_2SO_4, the product obtained is
a) $CH_3COOC_2H_5$ b) C_2H_2 c) C_2H_6 d) C_2H_4

155. Phenol is heated with phthalic anhydride in presence of conc H_2SO_4. The product gives pink colour with

alkali. The product is

a) Phenolphthalein b) Bakelite c) Salicylic acid d) Fluorescein

156. The action of halogen acids on an ether, has the following order of reactivity:

a) HCl > HBr > HI b) HI > HCl > HBr c) HI > HBr > HCl d) HCl > HI > HBr

157. Rectified spirit contains:

a) 75.0 % alcohol b) 85.5% alcohol c) 95.6% alcohol d) 100.0% alcohol

158. Phenyl magnesium bromide reacts with methanol to give a mixture of:

a) Anisole and Mg(OH)Br
b) Benzene and Mg(OMe)Br
c) Toluene and Mg(OH)Br
d) Phenol and Mg(Me)Br

159. $\text{Phenol} \xrightarrow{NaNO_2/H_2SO_4} B \xrightarrow{H_2O} C \xrightarrow{NaOH} D$

Name of the reaction is

a) Liebermann's reaction b) Phthalein fusion test
c) Reimer-Tiemann reaction d) Schotten-Baumann reaction

160. The commonly used dehydrating agent in the preparation of an ester is:

a) P_2O_5 b) Anhydride $CaCl_2$ c) Anhydride $AlCl_3$ d) Conc. H_2SO_4

161. Nobel's oil is:

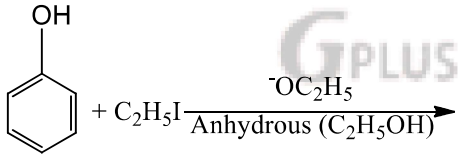
a) Fire extinguisher b) Insecticide c) Explosive d) Detergent

162. Phenol, *p*-methylphenol, *m*-nitrophenol and *p*-nitrophenol follows order of increasing strength as

a) Phenol, *p*-methylphenol, *p*-nitrophenol, *m*-nitrophenol
b) *p*-methylphenol, pheol, *m*-nitrophenol, *p*-nitrophenol
c) *p*-methylphenol, *m*-nitrophenol, phenol, *p*-nitrophenol
d) *m*-nitrophenol, *p*-nitrophenol, phenol, *p*-methylphenol

163. Ethylene glycol on oxidation with per-iodic acid gives:

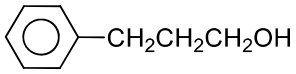
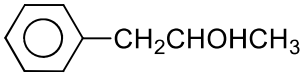
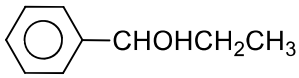
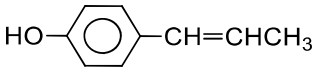
a) Oxalic acid b) Glyoxal c) Formaldehyde d) Glycollic acid

164. 

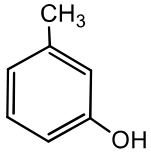
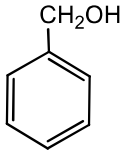
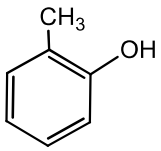
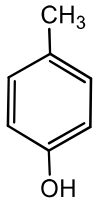
a) $C_6H_5OC_2H_5$ b) $C_2H_5OC_2H_5$ c) $C_6H_5OC_6H_5$ d) C_6H_5I

165. The major product of the following reaction,

$C_6H_5CH = CHCH_3 \xrightarrow[(ii)NaBH_4]{(i)Hg(OA)_2,THF-H_2O}$ is

a) 
b) 
c) 
d) 

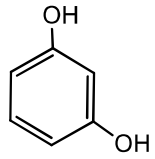
166. The structure of the compound that gives a tribromo derivative on treatment with bromine water is

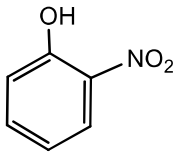
a) 
b) 
c) 
d) 

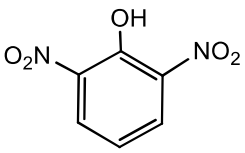
167. Which of the following reagents may be used to distinguish between phenol and benzoic acid?

a) Aqueous NaOH b) Tollen's reagent c) Molisch reagent d) Neutral $FeCl_3$

168. Which is obtained on treating phenol, with dilute HNO_3?

a) 

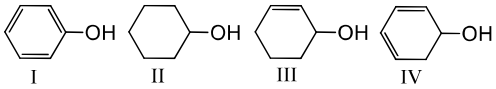
b) 

c) 

d) None of these

169. Consider the following reaction,
$C_2H_5OH + H_2SO_4 \rightarrow$ Product
Among the following, which one cannot be formed as a product under any conditions?
a) Ethyl hydrogen sulphate b) Ethylene
c) Acetylene d) Diethyl ether

170. Dehydration of the following in increasing order is



a) I < II < III < IV b) II < III < IV < I c) I < II < III < IV d) I < IV < II < III

171. Excess of glycol when dehydrated gives:
a) Ethylene oxide b) Ethanol c) Acrolein d) 1,4-dioxan

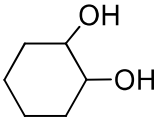
172. In the reduction,
$R—CHO + H_2 \longrightarrow RCH_2OH$
The catalyst used is:
a) Ni b) Pd c) Pt d) All of these

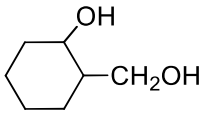
173. Action of HNO_2 on CH_3NH_2 gives:
a) CH_3OH b) $CH_3 \cdot O \cdot CH_3$ c) $CH_3O—N=O$ d) Both (b) and (c)

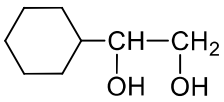
174. Primary and secondary alcohols on action of reduced copper give:
a) Aldehydes and ketones respectively
b) Ketones and aldehydes respectively
c) Only aldehydes
d) Only ketones

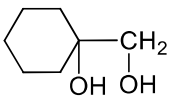
175. Diethyl ether absorbs oxygen to form:
a) Red coloured sweet smelling compound
b) Acetic acid
c) Ether suboxide
d) Ether peroxide

176. $(A) \xrightarrow{HIO_4}$ cyclohexanone + HCHO. What is (A)?

a) 

b) 

c) 

d) 

177. Which of the following undergoes dehydration most readily?
a) 1-phenyl-1-butanol b) 1-phenyl-2-butanol c) 2-phenyl-2-butanol d) 2-phenyl-1-butanol

178. Ether in contract with air for a long time form peroxides. The presence of peroxide in ether can be tested by adding Fe^{+2} ion in it and then adding:
a) KCNS b) $SnCl_2$ c) $HgCl_2$ d) KI

179. Cyclohexanol is a:
a) Phenol b) Primary alcohol c) Sec. alcohol d) *tert*. Alcohol

180. Glycerol on oxidation with dil. HNO_3 gives:
a) Tartronic acid b) Mesoxalic acid c) Oxalic acid d) Glyceric acid

181. Butan-2-ol is:
a) Primary alcohol b) Secondary alcohol c) Tertiary alcohol d) None of these

182. Pepperment can be extracted from plant sources by using solvents like:
a) NH_3 b) H_2O c) CH_3COOH d) C_2H_5OH

183. Chlorine reacts with ethanol to give:

a) Ethyl chloride b) Chloroform c) Acetaldehyde d) Chloral

184. Molasses contains:
a) 70 % sugar b) 50% sugar c) 60% sugar d) 10% sugar

185. Which of the following are known as mercaptans?
a) Thio-alcohols b) Thio-ethers c) Thio-aldehydes d) Thio-acids

186. Which forms most stable hydrate?
a) CH_3CHO b) C_6H_5CHO c) CCl_3CHO d) CH_3COCH_3

187. An organic compound dissolved in dry benzene evolved hydrogen on treatment with sodium. It is:
a) A ketone b) An aldehyde c) A tertiary amine d) An alcohol

188. Sodium ethoxide is obtained by the reaction of ethyl alcohol with:
a) NaOH b) Na c) NaCl d) $NaHCO_3$

189. Which one of the following compounds will not react with CH_3MgBr?
a) Ethyl acetate b) Acetone c) Dimethyl ether d) Ethanol

190. The major organic product in the reaction,
$CH_3—O—CH(CH_3)_2 + HI \longrightarrow$ Product is:
a) $\begin{matrix} CH_3OC(CH_3)_2 \\ | \\ I \end{matrix}$ b) $CH_3I + (CH_3)_2CHOH$ c) $CH_3OH + (CH_3)_2CHI$ d) $ICH_2OCH(CH_3)_2$

191. Structure of diethyl ether can be confirmed by:
a) Kolbe's synthesis
b) Frankland's synthesis
c) Wurtz's synthesis
d) Williamson's synthesis

192. Glycerol on oxidation with bismuth nitrate mainly gives:
a) Glyceric acid b) Tartronic acid c) Mesoxalic acid d) Oxalic acid

193. The end product of the following sequence is:

$$CH_3Br \xrightarrow{KCN(alc.)} (A) \xrightarrow{H_3O^+} (B) \xrightarrow[Ether]{LiAH_4} (C)$$

a) CH_3CHO b) CH_3CH_2OH c) CH_3COCH_3 d) CH_4

194. Saponification means hydrolysis of an ester with:
a) Enzyme b) CH_3COOH c) H_2SO_4 d) NaOH

195. Which of the following can work as dehydrating agent for alcohols?
a) H_2SO_4 b) Al_2O_3 c) H_3PO_4 d) All of these

196. In CH_3CH_2OH the bond which most readily undergoes heterolytic cleavage during its reaction with CH_3COOH/H_2SO_4 is:
a) C—C b) C—O c) O—H d) C—H

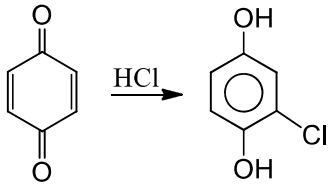
197. When ethyl alcohol vapours mixed with air, are passed over heated platinized asbestos, the compound formed is:
a) Acetaldehyde b) Diethyl ether c) Acetone d) None of these

198. Which of the following reactions will not yield *p*-tert butylphenol?
a) $\begin{matrix} CH_3 \\ | \end{matrix}$
$Phenol + CH_3 - C = CH_2 \xrightarrow{H^+}$
b) $Phenol + (CH_3)_3COH \xrightarrow{H^+}$
c) $Phenol + (CH_3)_3C.Cl \xrightarrow{AlCl_3}$
d) $Phenol + CHCl_3 \xrightarrow{NaOH}$

199. One mole of an organic compound *A* with the formula C_3H_8O reacts completely with two moles of HI to form *X* and *Y*. When *Y* is boiled with aqueous alkali it forms *Z*. *Z* answers the iodoform test. The compound *A* is
a) Propan-2-ol b) Propan-1-ol c) Ethoxyethane d) Methoxyethane

200. Which one of the following alcohol is used as an antifreeze reagent for making explosives?
a) Glycerol b) Glycol c) Ethanol d) Phenol

201. The IUPAC name of $CH_3OCH(CH_3)_2$ is:
   a) 1-methoxy propane
   b) 3-methoxy propane
   c) Methyl-isopropylether
   d) 2-methoxy propane

202. 

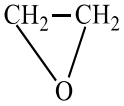
is an example of
   a) 1, 2-addition of HCl followed by tautomerism
   b) 1, 2-addition followed by reduction
   c) 1, 4-addition followed by tautomerism
   d) 1, 4-addition followed by oxidation

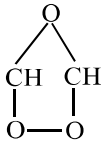
203. Absolute ethanol cannot be obtained by simple fractionation of a solution of ethanol and water because:
   a) Their boiling points are very near
   b) Ethanol remains dissolved in water
   c) They form a constant boiling mixture
   d) Ethanol molecules are solvated

204. Etherates are
   a) Ethers
   b) Solution in ether
   c) Complexes of ethers with Lewis acid
   d) Complexes of ethers with Lewis base

205. Glycerol is not used in:
   a) Cosmetics
   b) Matches
   c) Explosives
   d) Soaps

206. Which will not form a yellow precipitate on heating with an alkaline solution of iodine?
   a) $CH_3CHOHCH_3$
   b) $CH_3CH_2CHOHCH_3$
   c) CH_3OH
   d) CH_3CH_2OH

207. Which of the following is an alkoxide?
   a) 

   b) $CH_3CH_2CH_2CH_2ONa$
   c) $CH_2OH \cdot CH_2OH$
   d) 

208. The acidic character of 1°, 2°, 3° alcohols, H_2O and $RC \equiv CH$ is of the order
   a) $H_2O > 1° > 2° > 3° > RC \equiv CH$
   b) $RC \equiv CH > 3° > 2° > 1° > H_2O$
   c) $1° > 2° > 3° > H_2O > RC \equiv CH$
   d) $3° > 2° > 1° > H_2O > RC \equiv CH$

209. The enzyme which can catalyse the conversion of glucose to ethanol is:
   a) Zymase
   b) Diastase
   c) Maltase
   d) Invertase

210. Oxygen atom of ether is:
   a) Very active
   b) Replaceable
   c) Active
   d) Comparatively inert

211. Argol, a brown crust, formed during the fermentation of grape juice contains
   a) CO_2
   b) Fused oil
   c) Potassium hydrogen tartarate
   d) lye

212. Benzoylation of phenol in alkaline medium is known is known as
   a) Friedel-Crafts reaction
   b) Wurtz-Fittig reaction
   c) Schotten-Baumann reaction
   d)

213. The prospective fuel 'gashol' is a mixture of:
   a) Gaseous hydrocarbons and heavy water
   b) Petrol and phenol
   c) Petrol and ethanol
   d) Radioactive substances

214. Identify the product/s in the following reaction.
$3CH_3CH = CH_2 \xrightarrow{BH_3} X \xrightarrow{H_2O_2/OH^-}$

Products $+H_3BO_3$

a) $CH_3CH_2CH_2OH$ b) $CH_3CHOHCH_3$ c) CH_3CH_2CHO d) $CH_3CH_2OH + CH_3OH$

215. A fruity smell is obtained by the reaction of ethanol with

a) CH_3COCH_3 b) PCI_5 c) CH_3COOH d) CH_3CHO

216. Which of the following reactions does not yield an ether?

a) Sodium methoxide reacts with dimethyl sulphate
b) Sodium ethoxide reacts with ethyl bromide
c) Sodium ethoxide reacts with bromocyclopropane
d) Ethanol reacts with CH_2N_2 in presence of HBF_4

217. An alcohol on alk. $KMnO_4$ oxidation gives first acetone and on further oxidation acetic acid. It is:

a) Ethyl alcohol
b) Isopropyl alcohol
c) Primary alcohol
d) None of these

218. Which is not the intermediate stage of following conversion?

$(CH_3)_2 - C - C - (CH_3)_2$
OH OH

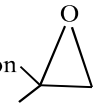
$\xrightarrow[\Delta]{Dil.H_2SO_4}$ $CH_3COC(CH_3)_3$

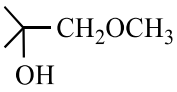
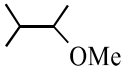
a) $(CH_3)_2C(\overset{\oplus}{OH_2})-C(\overset{\oplus}{OH_2})(CH_3)_2$

b) $(CH_3)_2C(OH)-\overset{\oplus}{C}(CH_3)_2$

c) $CH_3-\overset{\oplus}{C}(OH)-C(CH_3)_3$

d) $CH_3-C(=\overset{\oplus}{O}H)-C(CH_3)_3$

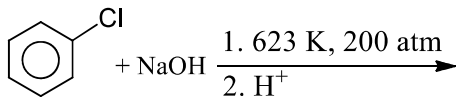
219. In the reaction  + $CH_3OH \xrightarrow{CH_3ONa}$ Product

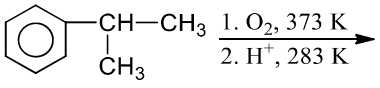
a)  b)  c)  d) 

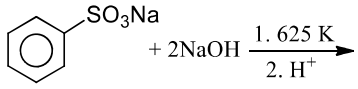
220. When diethyl ether is heated with an excess of PCl_5, it yields

a) Ethyl chloride b) Diethyl ether peroxide
c) Ethanoyl chloride d) Perchlorodiethy ether

221. Which of the following represents the Dow process for the manufacture of phenol?

a) 

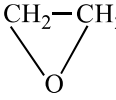
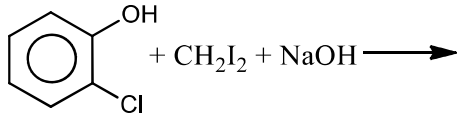
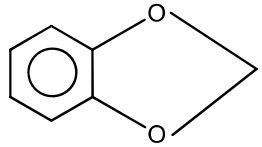
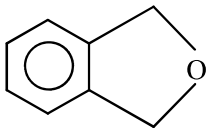
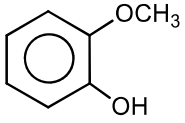
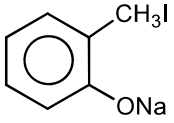
b) 

c) 

d) None of the above

222. The organic compound present in tincture of iodine is:

a) Alcohol b) CCl_4 c) Acetone d) CS_2

223. Phenol on heating with CCl_4 and aqueous KOH gives salicylic acid. This reaction is
   a) Friedel-Craft reaction b) Diels-Alder reaction
   c) Reimer-Tiemann reaction d) Wittig reaction
224. The—OH group of methyl alcohol cannot be replaced by chlorine by the action of:
   a) Chlorine b) HCl c) PCl_3 d) PCl_5
225. The following substance can be used as a raw material for obtaining alcohol:
   a) Potatoes b) Molasses c) Maize d) All of these
226. On oxidation, an alcohol gives an aldehyde having the same number of carbon atoms as that of alcohol. The alcohol is:
   a) 1° alcohol
   b) 2° alcohol
   c) 3° alcohol
   d) None of these
227. The end product of which of the following reaction is isomer of alcohols?
   a) $C_2H_4 \xrightarrow{B_2H_6} A \xrightarrow[NaOH]{H_2O_2} B$
   b) $CHI_3 \xrightarrow[\Delta]{Ag} A \xrightarrow[Hg^{2+}]{Dil\ H_2SO_4} B \xrightarrow{Reduction} C$
   c) $C_2H_4 \xrightarrow{HI} A \xrightarrow{Aqueous\ KOH} B \xrightarrow[140^{\circ}C]{Conc.H_2SO_4} C$
   d) $CH_3MgBr \xrightarrow{CH_2O} A \xrightarrow{H_2O} C$
228. From amongst the following alcohols the one that would react fastest with conc. HCI and anhydrous $ZnCI_2$ is
   a) 2-butanol b) 2-methyl propan-2-ol c) 2-methylpropanol d) 1 butanol
229. Which of the following is least soluble in water?
   a) C_2H_5OH b) C_3H_7OH c) C_4H_9OH d) $C_5H_{11}OH$
230. The reaction given below is called:
   $C_2H_5OH + SOCl_2 \longrightarrow C_2H_5Cl + SO_2 + HCl$
   a) Kharasch effect b) Wurtz reaction c) Darzen's reaction d) Hunsdicker reaction
231. The compound with formula $C_4H_{10}O$ yields a compound C_4H_8O on oxidation. The compound $C_4H_{10}O$ is:
   a) An aldehyde b) An alcohol c) A ketone d) An anhydride
232. Reaction of  with RMgX followed with hydrolysis produces :
   a) RCHOHR b) RCH_2CH_2OH c) RCHOHCH$_3$ d) RCH=CHOH
233. 
   The product is
   a)  b)  c)  d) 
234. C_2H_5OH cannot be dried by anhydrous $CaCl_2$, because:
   a) C_2H_5OH is soluble in water
   b) Explosion takes place
   c) C_2H_5OH reacts with $CaCl_2$
   d) None of the above
235. Denatured spirit is mainly used as a:
   a) Good fuel
   b) Drug

c) Solvent in preparing varnishes
d) Material in the preparation of oil

236. The dehydration of 2-methyl butanol with conc. H_2SO_4 gives
a) 2-methyl butane as major product
b) Pentene
c) 2-methyl but-2-ene as major product
d) 2-methyl pent-2-ene

237. Ethers are not distilled to dryness for fear of explosion. This is due to formation of:
a) Oxides
b) Alcohol
c) Ketones
d) Peroxides

238. Tertiary alcohols (3°) having at least four carbon atoms upon drastic oxidation yield carboxylic acid with
a) One carbon atom less
b) Two carbon atoms less
c) Three carbon atoms less
d) All the above three options are correct

239. Lucas reagent is
a) Anhydrous $AlCl_3$ with concentrated HCl
b) Anhydrous $ZnCl_2$ and concentrated H_2SO_4
c) Anhydrous $ZnCl_2$ and concentrated HCl
d) Anhydrous $CaCl_2$ and concentrated HCl

240. The cleavage of an aryl-alkyl ether with cold HI gives
a) Alkyl iodide and water
b) Aryl iodide and water
c) Alkyl iodide, aryl iodide and water
d) Phenol and alkyl iodine

241. Phenol is heated with a solution of mixture of KBr and $KBrO_3$. The major product obtained in the above reaction is
a) 2-bromophenol
b) 3-bromophenol
c) 4-bromophenol
d) 2, 4, 6-tribromophenol

242. For the preparation ter-butylmethylether by Williamson's method the correct choice of reagents is:
a) Methoxide and ter-butylbromide
b) Methanol and 2-bromobutane
c) 2-butanol and methylbromide
d) Ter-butoxide and methylbromide

243. Consider the following reactions,

$$X + HCl \xrightarrow[\text{(addition)}]{\text{Anhydrous } AlCl_3} C_2H_5Cl \xleftarrow[\text{(substitution)}]{\text{anhydrous } ZnCl_2/HCl} Y$$

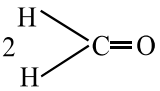
Y can be converted to X on heating with... at .... temperature.

a) Al_2O_3, 350°C
b) Cu, 300°C
c) $Ca(OH)_2 + CaOCl_2$, 60°C
d) $NaOH/I_2$, 60°C

244. Which of the following methods cannot be used for the preparation of an ester?
a) $RCOOH + R'OH + OH^-$
b) $RCOCl + R'OH$ + Pyridine
c) $RCOOH + R'OH + H^+$
d) $(RCO)_2O + R'OH$ + Pyridine

245. Oxygen containing organic compound upon oxidation forms a carboxylic acid as the only organic product with its molecular mass higher by 14 units. The organic compound is
a) An aldehyde
b) A primary alcohol
c) A secondary alcohol
d) A ketone

246. A compound X with molecular formula C_3H_8O can be oxidised to a compound Y with the molecular formula $C_3H_6O_2$. X is most likely to be:
a) Primary alcohol
b) Secondary alcohol
c) Aldehyde
d) Ketone

247. $HOH_2C \cdot CH_2OH$ on heating with periodic acid gives:
a) 2 
b) 2 CO_2
c) 2 HCOOH
d) 

248. Reaction of tertiary butyl alcohol with hot Cu at 350°C produces
a) Butanol
b) Butanal
c) 2-butene
d) Methylpropene

249. Ethyl chloride is converted into diethyl ether by
a) Perkins reaction
b) Grignard reagent
c) Wurtz reaction
d) Williamson's synthesis

250. The product obtained by heating diethyl ether with HI is
a) C_2H_5I b) C_2H_5OH c) $C_2H_5OH + C_2H_5I$ d) $C_2H_5 - C_2H_5$

251. The reaction,
$C_2H_5ONa + C_2H_5I \rightarrow C_2H_5OC_2H_5 + NaI$ is known as
a) Kolbe's synthesis
b) Wurtz's synthesis
c) Williamson's synthesis
d) Grignard's synthesis

252. Which one can differentiate between C_2H_5OH and CH_3OH?
a) H_2O b) $Na_2CO_3 + I_2$ c) NH_3 d) HCI

253. Ethylene oxide when, treated with Grignard reagent yields:
a) Cyclopropyl alcohol b) Primary alcohol c) Secondary alcohol d) Tertiary alcohol

254. Among the following compounds which can be dehydrated very easily?
a) $CH_3CH_2CH_2CH_2CH_2OH$
b) $CH_3CH_2CH_2CH(OH)CH_3$
c) $CH_3CH_2C(CH_3)(OH)CH_2CH_3$
d) $CH_3CH_2CH(CH_3)CH_2CH_2OH$

255. Catalytic dehydrogenation of a primary alcohol gives a
a) Secondary alcohol b) Aldehyde c) Ketone d) Ester

256. Action of nitrous acid on ethyl amine gives:
a) C_2H_6 b) C_2H_5OH c) NH_3 d) nitromethane

257. Which of the following compounds is most acidic?
a) CH_4 b) C_2H_6 c) $CH \equiv CH$ d) C_2H_5OH

258. 2-propanol $+NaBr \xrightarrow{\text{Reflux}} X$. What is X?
a) 2-bromopropane
b) Propane
c) Propene
d) Propanone

259. Which of the following reaction is/are feasible?
a) $CH_3CH_2Br + {}^{+}NaO^{-}C(CH_3)_3 \longrightarrow CH_3CH_2O-C(CH_3)_3$
b) $CH_3-C(CH_3)_2-Cl + Na\ {}^{+}O^{-}CH_2CH_3 \longrightarrow CH_3CH_2-O-C(CH_3)_3$
c) Both (a) and (b)
d) None of the above

260. Alcohols are neutral in character whereas thio-alcohols are .....in character.
a) Strongly acidic b) Weakly acidic c) Basic d) Neutral

261. On boiling with concentrated hydrobromic acid, phenyl ethyl ether yields
a) Phenol and ethane
b) Phenol and ethyl bromide
c) Bromobenzene and ethanol
d) Bromobenzene and ethane

262. General formula of primary alcohol is:
a) $-COH$ b) $>CHOH$ c) $-CH_2OH$ d) All of these

263. The compound B formed in the following sequence of reactions,

$CH_3CH_2CH_2OH \xrightarrow{PCl_5} A \xrightarrow{Alc.NaOH} B$ will be:

a) Propyne b) Propene c) Propanal d) Propane

264. Formation of diethyl ether form ethanol is based on a

a) Dehydration reaction b) Dehydrogenation reaction

c) Hydrogenation reaction d) Homolytic fission reaction

265. Two aromatic compounds having foemula C_7H_8O which are easily identifiable by $FeCl_3$ solution test (violet colouration) are

a) *o*-cresol and benzyl alcohol b) *m*-cresol and *p*-cresol

c) *o*-cresol and *p*-cresol d) Methyl phenyl ether and benzyl alcohol

266. In the reaction,

$CH_3OH \xrightarrow{Oxidation} A \xrightarrow{NH_3} B$; A and B are

a) $HCHO, HCOONH_4$ b) $HCOOH, HCOONH_4$ c) $HCOOH, HCONH_2$ d) $HCHO, HCONH_2$

267. Acetic acid and methanol are obtained on a large scale by destructive distillation of:

a) Wood b) Coal c) Turpentine oil d) CH_3COOH

268. Which of the following statement is incorrect?

a) Enzymes are in colloidal state

b) Enzymes are catalyst

c) Enzymes can catalyse any reaction

d) Urease is an enzyme

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

$CH_3CHO \xrightarrow[Pd]{H_2} (A) \xrightarrow{Na} (B) \xrightarrow{CH_3I} (C)$

a) Alcohol b) Ether c) Alkene d) None of these

270. In the reaction, the products formed are:

$(CH_3)_2CH_2 \cdot CH_2 \cdot O \cdot CH_2CH_3 + HI \xrightarrow{Heated}$

a) $(CH_3)_2CHCH_3 + CH_3CH_2OH$

b) $(CH_3)_2CH \cdot CH_2OH + C_2H_6$

c) $(CH_3)_2CHCH_2OH + C_2H_5I$

d) $(CH_3)_2CH \cdot CH_2I + CH_3CH_2OH$

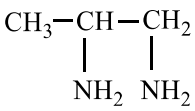
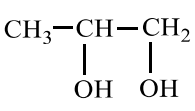
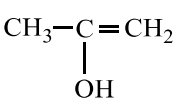
271. When glycerol is treated with a mixture of excess of conc. HNO_3 and H_2SO_4, the compound formed is:

a) Glycerol mononitrate b) Glycerol dinitrate c) Glycerol trinitrate d) acrolein

272. Identify Z in the following series,

$CH_3-CH_2-CH_2OH \xrightarrow[160\text{-}180^oC]{Conc.H_2SO_4} X \xrightarrow{Br_2}$

$Y \xrightarrow[2.\ NaNH_2]{1.Alc.KOH} Z$:

a)  b)  c)  d) $CH_3—C\equiv CH$

273. 2 mole of ethanol are burnt. The amount of CO_2 obtained will be:

a) 132 g b) 44 g c) 176 g d) 88 g

274. In which case, methyl *t*-butyl ether is formed?

a) $(C_2H_5)_3CONa + CH_3Cl$ b) $(CH_3)_3CONa + CH_3Cl$

c) $(CH_3)_3CONa + C_2H_5Cl$ d) $(CH_3)_2CHONa + CH_3Cl$

275. Grignard reagent reacts with HCHO to produce

a) Secondary alcohol

b) Anhydride

c) Acid

d) Primary alcohol

276. Alcohol is not used in making:
a) Chloral b) Chloroform c) Benzene d) Acetaldehyde

277. Among the alkenes which one produces tertiary butyl alcohol on acid hydration?
a) $CH_3CH_2CH = CH_2$ b) $CH_3CH = CH - CH_3$ c) $(CH_3)_2C = CH_2$ d) $CH_3 - CH = CH_2$

278. Diethyl ether is soluble in:
a) Water b) Dilute HCl c) Conc. H_2SO_4 d) Conc. KOH

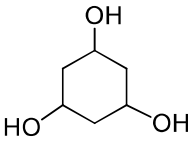
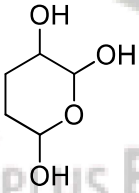
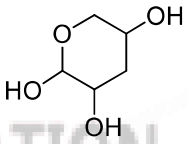
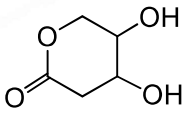
279. Salicyl aldehyde is obtained when phenol is heated with $CHCl_3$ and aqueous NaOH. This reaction is known by which name?
a) Carbyl amine reaction b) Hofmann's reaction
c) Reimer-Tiemann reaction d) Kolbe-Schmidt reaction

280. The conversion of *m*-nitrophenol to resorcinol involves respectively
a) Hydrolysis, diazotization and reduction b) Diazotization, reduction and hydrolysis
c) Hydrolysis, reduction and diazotization d) Reduction, diazotization and hydrolysis

281. In Williamson's synthesis
a) An alkyl halide is treated with sodium alkoxide b) An alkyl halide is treated with sodium
c) An alcohol is heated with conc. H_2SO_4 at 130°C d) None of the above

282. $C - O - C$ angle would be maximum in
a) $CH_3 - O - CH_3$ b) $CH_3 - O - C_2H_5$
c) $C_2H_5 - O - C_2H_5$ d) $(CH_3)_2CH - O - CH(CH_3)_2$

283. Ethers are very good solvent for which type of compounds?
a) Lewis base b) Acids c) Lewis acid d) None of these

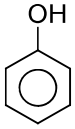
284. In which molecule, cleavage by HIO_4 is not observed?
a) 
b) 
c) 
d) 

285. The products formed in the following reaction,
$C_6H_5—O—CH_3 + HI \xrightarrow{Heat}$ are:
a) C_6H_5OH and CH_3I b) C_6H_5I and CH_3OH c) $C_6H_5CH_3$ and HOI d) C_6H_6 and CH_3OI

286. Acid catalysed hydration of alkenes except ethene leads to the formation of
a) Mixture of secondary and tertiary alcohols b) Mixture of primary and secondary alcohols
c) Secondary or tertiary alcohol d) Primary alcohol

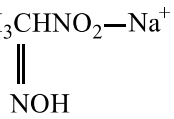
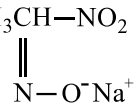
287. Which of the following compounds when heated with CO at 150°C and 500 atm pressure in presence of BF_3 forms ethyl propionate?
a) C_2H_5OH b) CH_3OCH_3 c) $C_2H_5OC_2H_5$ d) $CH_3OC_2H_5$

288. 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. $HCOOC_2H_5$
Select the correct answer using the codes given below.
a) II only b) III only c) I and IV d) II and IV

289. When phenolic ether is heated with HI, it yields
a) Alkyl halide + aryl halide + water
b) alkyl halide + 

c) Alcohol +aryl halide d) None of the above

290. The red coloured compound formed during Victor-meyer's test for ethanol is:

a)  b) CH_3CH_2NOH c)  d) None of these

291. Picric acid is a stronger acid than acetic acid and benzoic acid. It contains

a) $-SO_3H$ group b) Two – COOH groups

c) Phenolic group d)

292. Which will not form yellow precipitate on heating with an alkaline solution of iodine?

a) $CH_3CH_2CHOHCH_3$ b) $CH_3CH_2CHOHCH_3$ c) CH_3CH_2OH d) CH_3OH

293. The cleavage of an aryl-alkyl ether with hydrogen halide will give:

a) A molecule each of an alkyl halide and water

b) A molecule each of an aryl halide and water

c) A molecule each of an alkyl halide, aryl halide and water

d) A molecule each of phenol and an alkyl halide

294. HBr reacts with $CH_2=CH—OCH_3$ under anhydrous conditions at room temperature to give:

a) CH_3CHO and CH_3Br

b) $BrCH_2CHO$ and CH_3OH

c) $BrCH_2—CH_2—OCH_3$

d) $H_3C—CHBr—OCH_3$

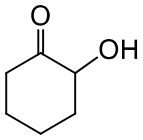
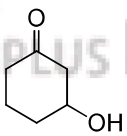
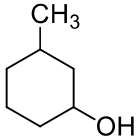
295. In ether the active group is:

a) Oxygen b) C_2H_5 c) Hydroxyl d) None of these

296. The correct order of solubility of 1°, 2° and 3° alcohol in water is:

a) $3^\circ > 2^\circ > 1^\circ$ b) $1^\circ > 2^\circ > 3^\circ$ c) $3^\circ > 1^\circ > 2^\circ$ d) None of these

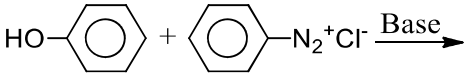
297. Maximum dehydration takes place in that of

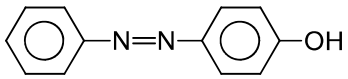
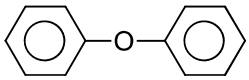
a)  b)  c)  d) 

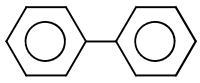
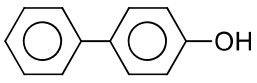
298. The dehydration of butane-1-ol gives

a) 1-butene as the main product b) 2-butene as the main product

c) Equal amounts of 1-butene and 2-butene d) 2-methyl propene

299. 

a)  b) 

c)  d) 

300. When an ether is treated with P_2S_5 we get:

a) Thio-alcohol b) Thio-ester c) Thio-ether d) Thio-aldehyde

301. Order of reactivity of halogen acids towards an alcohol is

a) HCl > HBr > HI b) HBr > HI > HCl c) HI > HBr > HCl d) HI > HCl > HBr

302. In which of the following reactions the product is an ether?

a) $C_6H_6 + CH_3COCl$/anhydrous $AlCl_3$ b) C_2H_5Cl + aq. KOH

c) $C_6H_6 + C_6H_5COCl$/anhydrous $AlCl_3$ d) $C_2H_5Cl + C_2H_5ONa$

303. The b.p. of alcohols are….than corresponding thiols.
a) More b) Less c) Same d) Either of these

304. 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

305. When phenol is treated with excess of bromine water, it gives
a) *m*-bromophenol b) *o*-and *p*-bromophenols
c) 2, 4-dibromophenol d) 2, 4, 6-tribromophenol

306. An aqueous solution of ethyl alcohol:
a) Turns blue litmus red
b) Turns red litmus blue
c) Does not affect the litmus colour
d) Decolourises litmus

307. Enzymes are:
a) Living organisms
b) Dead organisms
c) Complex nitrogenous substances produced from living cells
d) None of the above

308. Which of the following is used as anaesthetic?
a) $CHCl_3$
b) C_2H_5OH
c) $C_2H_5OC_2H_5$
d) $CHCl_3$ and $C_2H_5OC_2H_5$

309. Picric acid is
a) 2, 4, 6-tribromophenol b) *Sym*-trinitrophenol
c) trinitrophenol d) 2, 4, 6-trinitrotoluene

310. The correct order of reactivity of hydrogen halides with ethyl alcohol is
a) HF > HCl > HBr > HI b) HCl > HBr > HF > HI
c) HBr > HCl > HI >HF d) HI > HBr > HCl > HF

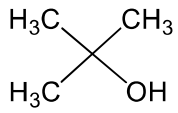
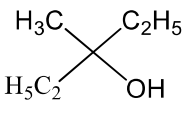
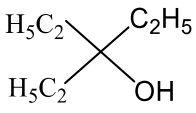
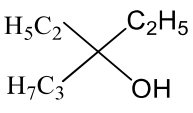
311. Denatured alcohol is
a) Ethanol + methanol b) Rectified spirit + methanol + naphtha
c) Undistilled ethanol d) Rectified spirit

312. Which of the following reacts with water?
a) $CHCl_3$ b) CCl_4 c) CCl_3CHO d) CH_2ClCH_2Cl

313. Formic acid is obtained when:
a) $(CH_3COO)_2Ca$ is heated with conc. H_2SO_4
b) Calcium formate is heated with calcium acetate
c) Glycerol is heated with oxalic acid
d) Acetaldehyde is oxidized with $K_2Cr_2O_7$ and conc. H_2SO_4

314. Primary, secondary and tetiary alcohols are distinguished from one another by
a) Ninhydrin test b) Tollen's reagent c) Lucas test d) Wittig reaction

315. Ethyl ester $\xrightarrow[\text{excess}]{CH_3MgBr}$ *P*. The product *P* will be

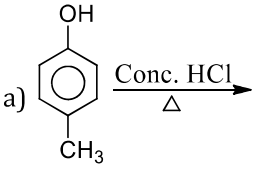
a) 
b) 
c) 
d) 

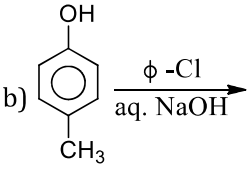
316. Metal alkoxides contain:
a) Metal-carbon bond b) Metal-oxygen bond c) Metal-methyl bond d) None of these

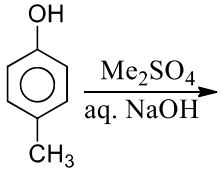
317. 3-methyl-2-butanol on treatment with HCl gives predominantly:
a) 2-chloro-2-methylbutane
b) 2-chloro-3-methylbutane

c) 2,2-dimethylpentane
d) None of the above

318. Which reaction will occurs?

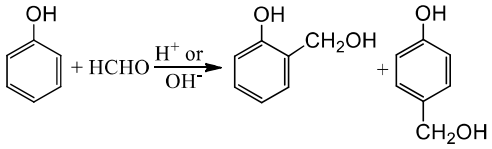
a) 

b) 

c) 

d) None of these

319. No reacts rapidly with:
a) 1° alcohol b) 2 °alcohol c) 3° alcohol d) None of these

320. 

This reaction is called

a) Reimer- Tiemann reaction b) Lederer-Manasse reaction
c) Sandmeyer reaction d) Kolbe's reaction

321. By which of the following procedures can ethyl *n*-propyl ether be obtained?

a) $C_2H_5OH \xrightarrow{HBr} I \xrightarrow[ether]{Mg} II \xrightarrow{H_2O} III \xrightarrow[CH_3CH_2Br]{Na}$

b) $C_2H_5OH \xrightarrow{HBr} I \xrightarrow[ether]{Mg} II \xrightarrow[2.\ H_3^+O]{1.\ CH_2O} III \xrightarrow[CH_3CH_2Br]{Na}$

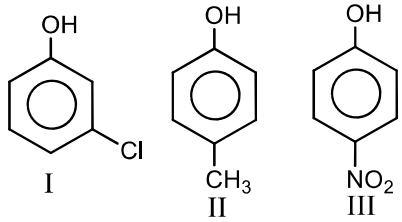
c) $C_2H_5OH + H_2SO_4 \xrightarrow{140°C}$

d) $C_2H_5OH + \text{Conc.}\ H_2SO_4 \xrightarrow{180°C} I \xrightarrow{CH_3CH_2CH_2Br}$

322. Which of the following statements is wrong in case of ethoxyethane?
a) It is used as anaesthetic
b) It is inflammable
c) Its dipole moment is zero
d) It is soluble in conc. H_2SO_4

323. Which of the following alcohols is made by fermentation?
a) Methanol b) Ethanol c) Glycerol d) Propanol

324. Correct acidic order of the following compounds is



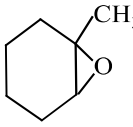
a) I > II > III b) III > I > II c) II > III > I d) I > III > II

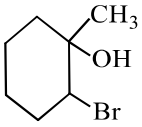
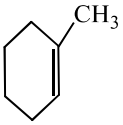
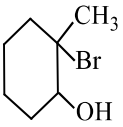
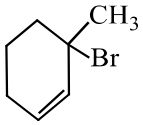
325. How many isomers of $C_5H_{11}OH$ will be primary alcohols?
a) 5 b) 4 c) 2 d) 3

326. Glycerol is oxidised by bismuth nitrate to produce
a) Oxalic acid b) Mesooxalic acid c) Glyceric acid d) Glyoxalic acid

327. The alcohol that produces turbidity immediately with $ZnCl_2$/conc. HCl at room temperature
a) 1-hydroxy butane b) 2-hydroxy butane
c) 2-hydroxy-2-methyl propane d) 1-hydroxy-2-methyl propane

328. The formula for allyl alcohol is:
a) CH_3—CH=CHCl b) CH_2=$CHCH_2OH$ c) $CH_2ClCH_2CH_3$ d) None of these

329. The product of the reaction  + HBr is :

a)  b)  c)  d) 

330. The compound that will react most readily with NaOH to form methanol is:
a) $(CH_3)_4N^+I^-$ b) CH_3OCH_3 c) $(CH_3)_3S^+I^-$ d) $(CH_3)_3C \cdot Cl$

331. Ethylene reacts with 1% cold alkaline $KMnO_4$ to give:
a) Oxalic acid b) Acetone c) Formaldehyde d) Glycol

332. In the Lucas test of alcohols, appearance of cloudiness is due to the formation of
a) Aldehydes b) Ketones c) Acid chlorides d) Alkyl chlorides

333. Tertiary alcohol is obtained when Grignard reagent reacts with:
a) Acetone b) Butanone c) Propanone d) All of these

334. 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

335. Ether on reacting with P_2S_5 form
a) Diethyl sulphide b) Thioalcohol c) Thioether d) Thioaldehyde

336. The best reagent to convert pent-3-en-2-ol into pent-3-en-2-one is:
a) Acidic $KMnO_4$
b) Alkaline $K_2Cr_2O_7$
c) Chromium anhydride in glacial acetic acid
d) Pyridinium chlorochromate

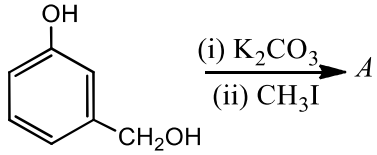
337. For one mole of glycerol, how many mole of acetyl chloride are required for complete acetylation?
a) One b) Two c) Three d) Four

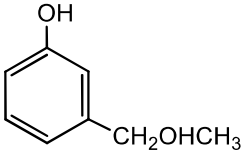
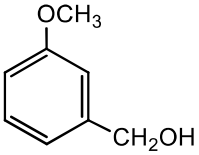
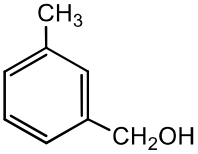
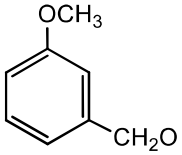
338. In the reaction involving C— OH bond, in alcohols the order of reactivity is:
a) $1^\circ > 2^\circ > 3^\circ$ b) $3^\circ > 2^\circ > 1^\circ$ c) $2^\circ > 3^\circ > 1^\circ$ d) None of these

339. Which is not correct?
a) Phenol is more acidic than acetic acid. b) Ethanol is less acidic than phenol.
c) Ethanol has higher boiling point than ethane. d) Ethane is non-linear molecule.

340. Under drastic conditions all the alcohols can be oxidized to carboxylic acids but the following alcohols give carboxylic acids having same number of carbon atoms:
a) Primary b) Secondary c) Tertiary d) None of these

341. The product *A* is



a)  b)  c)  d) 

342. Glycol is prepared industrially by the following reactions:

a) $\begin{matrix}CH_2Br\\|\\CH_2Br\end{matrix} + Na_2CO_3 + H_2O \longrightarrow \begin{matrix}CH_2OH\\|\\CH_2OH\end{matrix}$

b) $\begin{matrix}CH_2\\\|\\CH_2\end{matrix} + [O] + H_2O \longrightarrow \begin{matrix}CH_2OH\\|\\CH_2OH\end{matrix}$

c) $\begin{matrix}CH_2\\\|\\CH_2\end{matrix} + \frac{1}{2}O_2 \xrightarrow[300^\circ C]{Ag} \begin{matrix}CH_2\\|\\CH_2\end{matrix}\!\!>O \xrightarrow[Dil.HCl]{H_2O} \begin{matrix}CH_2OH\\|\\CH_2OH\end{matrix}$

d) None of the above

343. Scientific aspect of fermentation was first studied by:
a) Pasteur b) Brot c) Buchner d) Liebig

344. Ethyl alcohol is also known as:
a) Spirit of wine b) Methyl carbinol c) Grain alcohol d) All of these

345. Decreasing order of boiling points of *n*-pentanol (A), *n*-pentane (B), 3-pentanol (C) and 2,2-dimethyl propanol (D) is :
a) A, C, D, B b) B, D, C, A c) C, A, D, B d) None of these

346. CH_3COOH reacts rapidly with:
a) CH_3CH_2OH b) $(CH_3)_2CHOH$ c) $(CH_3)_3COH$ d) All of these

347. Reaction of *t*-butyl bromide with sodium methoxide produces:
a) Isobutane b) Isobutylene c) Sodium t-butoxide d) t-butyl methyl ether

348. Which of the following reactions can be used for the preparation of tert. butylmethyl ether?
a) $CH_3Br + (CH_3)_3CO^-Na^+ \rightarrow$ b) $(CH_3)_3CCl + CH_3O^-Na^+ \rightarrow$
c) $(CH_3)_3OH + CH_3Cl \rightarrow$ d) $(CH_3)_3CCl + CH_3OH \rightarrow$

349. Alcohols cannot be prepared from
a) $C_2H_5Br + \text{aq. KOH} \rightarrow$ b) $(CH_3)_2C=O \xrightarrow{LiAlH_4}$ c) $CH_3-\overset{\overset{O}{\|}}{C}-OCH_3 \xrightarrow[}{Na/EtOH}$ d) $CH_3CH_2Cl \xrightarrow{H_2O}$

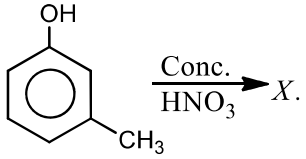
350. Alcohols of low molecular weight are:
a) Soluble in water
b) Soluble in water on heating
c) Insoluble in all solvents
d) Soluble in all solvents

351. $CH_3CH=CH-\underset{\underset{OH}{|}}{CH}-CH_3 \xrightarrow[\text{reagent}]{\text{Jones}}$? product is
a) $CH_3-CH_2-CH_2-\overset{\overset{O}{\|}}{C}-CH_3$
b) $CH_3-CH=CH-\overset{\overset{O}{\|}}{C}-CH_3$
c) $CH_3-CH_2-CH_2-\underset{\underset{OH}{|}}{CH}-CH_3$
d) CH_3-CH_2-COOH

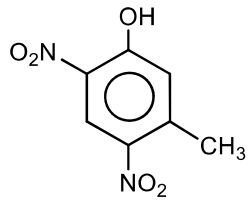
352. 23 g of sodium react with CH_3OH to give:

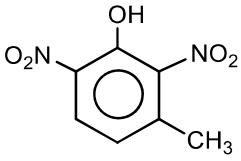
a) 1 mole of O_2 b) 1/2 mole of H_2 c) 1 mole of H_2 d) None of these

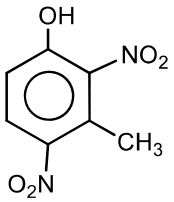
353. In the reaction for dinitration

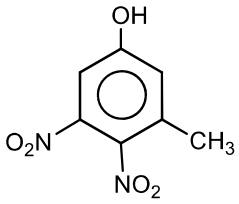


The major dinitrated product X is

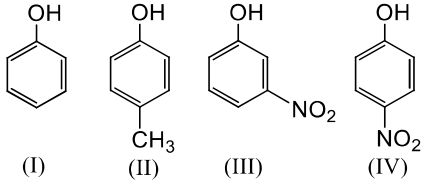
a) 

b) 

c) 

d) 

354. In the following compounds the order of acidic strength is



a) III > IV > I > II b) I > IV > III > II c) II > I > III > IV d) IV > III > I > II

355. Diethyl ether may behave as:

a) Lewis acid b) Lewis base c) Oxidising agent d) Reducing agent

356. For drying ether sodium metal can be used, but it cannot be used for drying ethyl alcohol because:

a) Na is very reactive
b) Ether reacts easily with Na
c) Ethyl alcohol reacts with sodium metal
d) None of the above

357. Saccharification is the process of conversion of:

a) Sugar solution into alcohol
b) Alcohol into starch
c) Starch into alcohol
d) Starch into alcohol

358. $R—CH=CH_2$ reacts with B_2H_6 in presence of H_2O_2 to give:

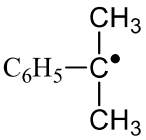
a) $RCOCH_3$ b) $RCHOHCH_2OH$ c) RCH_2CH_2OH d) RCH_2CHO

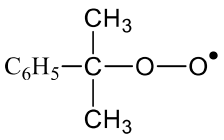
359. Sodium phenoxide reacts with CO_2 at 400 K and 4.7 atm pressure to give

a) Catechol b) Salicylaldehyde c) Sodium salicylate d) Benzoic acid

360. The reaction of *iso*-propylbenzene with oxygen in the presence of a catalytic amount of HBr followed by treatment with an acid gives phenol. The reaction proceeds through the intermediate formation of

a)

b) 

c) 

d) All of these

361. Product formed when HCHO is heated with KOH (aq):

a) CH_4 b) CH_3CHO c) CH_3OH d) C_2H_2

362. Diacetone alcohol is obtained by the reaction of:

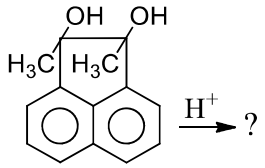
a) Acetone and ethanol
b) Acetone and conc. H_2SO_4
c) Acetone and $Ba(OH)_2$
d) Acetone and $Al(OH)_3$

363. The general formula of ether is:
a) R—CHO b) R—CO—R' c) R—O—R' d) R—COOR'

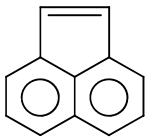
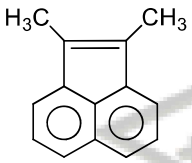
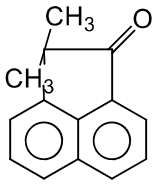
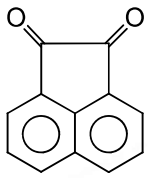
364. The enzyme pepsin hydrolyses:
a) Proteins to amino acids
b) Fats to fatty acids
c) Glucose to ethyl alcohol
d) Polysaccharides to monosaccharides

365. CH_3CH_2OH convert into CH_3CHO in the presence of
a) $Na_2Cr_2O_7$ and NaOH b) $Na_2Cr_2O_7$and dil. H_2SO_4
c) NaOH d) Fe in presence of NaOH

366. Which of the following combinations can be used to synthesise ethanol?
a) CH_3MgI and CH_3COCH_3 b) CH_3MgI and C_2H_5OH
c) CH_3MgI and $CH_3COOC_2H_5$ d) CH_3MgI and HCHO

367. 

Product is

a)  b)  c)  d) 

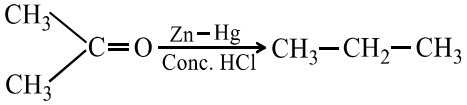
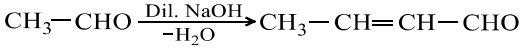
368. The boiling point of ethyl alcohol is much higher than that of dimethyl ether and C_2H_5SH , though both have the same molecular weight. The reason for this is:
a) Ether is insoluble in water
b) Methyl groups are attached to oxygen in ether
c) Dipole moment of ethyl alcohol is less
d) Ethyl alcohol shows hydrogen bonding

369. Acetylene and formaldehyde interact in the presence of copper acetylide as a catalyst to furnish the compound:
a) Butyne-1, 4-diol b) Butyne-2 c) Ethylene-1, 4-diol d) None of these

370. An unknown compound 'D' first oxidised to aldehyde and then acetic acid by a dilute solution of $K_2Cr_2O_7$ and H_2SO_4. The compound 'D' is
a) CH_3OH b) C_2H_5OH c) CH_3CH_2COOH d) CH_3CH_2CHO

371. Glycerol on oxidation with Fenton's reagent produces:
a) Glyceraldehyde
b) Dihydroxy acetone
c) Tartonic acid
d) Glyceraldehyde and dihydroxy acetone

372. An organic compound C_3H_6O neither gives precipitate with semicarbazide nor reacts with sodium. It could be
a) CH_3CH_2CHO b) CH_3COCH_3 c) $CH_2 = CHCH_2OH$ d) $CH_2 = CHOCH_3$

373. Which one among the following is Williamson's synthesis?
a) 
b) 

c) $C_2H_5I + C_2H_5ONa \longrightarrow C_2H_5 \cdot O \cdot C_2H_5 + NaI$

d) $HCHO \xrightarrow{NaOH} HCOONa + CH_3OH$

374. Which compound is capable of strong hydrogen bonding?

a) C_4H_9OH b) C_3H_7OH c) C_2H_5OH d) $C_5H_{11}OH$

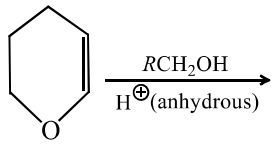
375. $CH{\equiv}CH \xrightarrow{O_3/NaOH} X \xrightarrow{Zn/CH_3COOH} Y$ is:

a) $CH_2OH{-}CH_2OH$ b) CH_3CH_2OH c) CH_3COOH d) CH_3OH

376. Which of the following statements is not correct?

a) All alcohols are miscible with water
b) Only lower alcohols are miscible with water
c) All alcohols are not poisonous
d) Methanol is not poisonous

377. The major product of the following reaction is:



a) A hemiacetal
b) An acetal
c) An ether
d) An ester

378. Widespread deaths due to liquor poisoning occurs due to presence of:

a) Lead compounds in liquor
b) Methyl alcohol in liquor
c) Ethyl alcohol in liquor
d) Carbonic acid in liquor

379. An alcohol produced during the manufacture of soap is:

a) Butanol b) Glycerol c) Ethanol d) Ethylene glycol

380. Which of the following reactions gives an dialkyl oxonium salt?

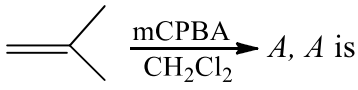
a) Ethyl alcohol + sodium metal
b) Diethyl ether + hydrochloric acid
c) Tertiary amine + alkyl halide
d) Nitromethane + sodium metal

381. The reaction of *neo*-pentyl alcohol with concentrated HCl gives

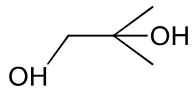
a) *neo*-pentyl chloride
b) 2-chloro-2-methylbutane
c) 2-methyl-2-butene
d) A mixture of *neo*-pentyl chloride and 2-methyl-2-butene

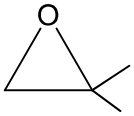
382. RCH_2CH_2OH can be converted to RCH_2CH_2COOH by the following sequence of steps

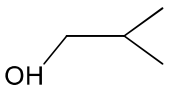
a) PBr_3, KCN, H_3O^+ b) $PBr_3, KCN, H_2/P^+$ c) KCN, H_3O^+ d) HCN, PBr_3, H_3O^+

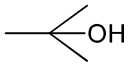
383. 

A, A is

a) 

b) 

c) 

d) 

384. When phenyl magnesium bromide reacts with *t*-butanol, the product would be

a) Benzene b) Phenol c) *t*-butyl benzene d) *t*-butyl phenyl ether

385. Which of the following is not cleaved by HIO_4?

A. Glycerol *B*. Glycol
C. Propan-1,3-diol *D*. Methoxy-2-propanol

a) *A*, *B*, *C*, *D* b) *A*, *B* c) *B*, *C* d) *C*, *D*

386. Ethyl propanoate on reduction with $LiAlH_4$ yeilds:
   a) Methanol
   b) Ethanol and propanol
   c) Propane
   d) Mixture of ethanol and methanol

387. When acetyl chloride is reduced with $LiAlH_4$, the product formed is:
   a) Methyl alcohol b) Ethyl alcohol c) Acetaldehyde d) Acetone

388. The correct order of acid strength of the following compounds is
   V. Phenol
   VI. *p*-cresol
   VII. *m*-nitrophenol
   VIII. *p*-nitrophenol
   a) IIII > II > I > IV b) IV > III > I > II c) II > IV > I > III d) I > II > IV > III

389. Alkyd resins, made of glycerol are used:
   a) As substitute for white chalk
   b) Instead of alkanes
   c) For paints and coatings
   d) For making alcohol

390. Which reagent is more effective to convert but-2-enal to but-2-enol?
   a) $KMnO_4$
   b) $NaBH_4$
   c) H_2/Pt
   d) $K_2Cr_2O_7/H_2SO_4$

391. An organic compound *A* containing C, H and O has a pleasant odour with boiling point of 78°C. On boiling *A* with concentrated H_2SO_4, a colourless gas is produced which decolourises bromine water and alkaline $KMnO_4$. The organic liquid *A* is
   a) C_2H_5Cl b) $C_2H_5COOCH_3$ c) C_2H_5OH d) C_2H_6

392. Identify (*X*) in the sequence:

$$\underset{(X)}{C_3H_8O} \xrightarrow[H_2SO_4]{K_2Cr_2O_7} C_3H_6O \xrightarrow[\text{Warm}]{I_2 + NaOH} CHI_3$$

   a) $CH_3—CH_2—CH_2OH$ b) $CH_3—\underset{\displaystyle OH}{\underset{|}{CH}}—CH_3$ c) $CH_3—O—CH_2—CH_3$ d) $CH_3—CH_2—CHO$

393. Phenol on reaction with $CHCl_3$ and NaOH give benzaldehyde. Intermediate of this reaction is
   a) Carbocation b) Carbanion c) Radical d) Carbene

394. Increasing order of acid strength among *tert*. butanol, isopropanol and ethanol is:
   a) Ethanol, isopropanol, *tert*. butanol
   b) *tert*. butanol, isopropanol, ethanol
   c) Isopropanol, *tert*. butanol, ethanol
   d) *tert*. butanol, ethanol, isopropanol

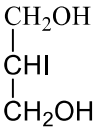
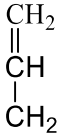
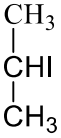
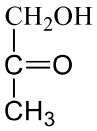
395. A neutral compound gives colour with ceric ammonium nitrate. It suggests that the compound has:
   a) Alcohol gp. b) Aldehyde gp. c) Ether gp. d) Ketone gp.

396. $CH_3OH \xrightarrow{CH_2=C=O} A \xrightarrow{\text{Rearrangement}} CH_3—\underset{\displaystyle O}{\underset{\|}{C}}—OCH_3$

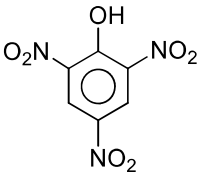
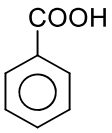
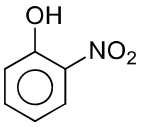
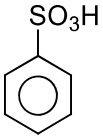
   In the above reaction *A* is
   a) $CH_3—\underset{\displaystyle OH}{\underset{|}{C}}=CH_2$ b) $CH_2=\underset{\displaystyle OH}{\underset{|}{C}}—OCH_3$ c) $CH_2 = CHOH$ d) None of these

397. Which compound will have highest boiling point?
   a) CH_4 b) CH_3OH c) C_2H_5OH d) HCHO

398. What is formed when glycerol reacts with excess of HI?

a)  b)  c)  d) 

399. Which of the following is not soluble in $NaHCO_3$ solution?

a)  b)  c)  d) 

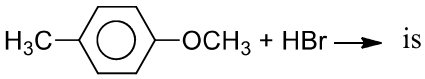
400. Pyroligneous acid doesn't contain

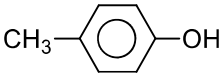
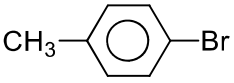
a) Acetic acid b) C_2H_5OH c) CH_3OH d) CH_3COCH_3

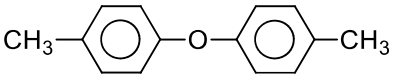
401. Power alcohol is a mixture of petrol and alcohol in the ratio:

a) 4 : 1 b) 1 : 4 c) 2 : 1 d) 1 : 2

402. The final product obtained in the reaction,

 is

a)  b) 

c)  d) None of the above

403. Which one of the following gases is liberated when ethyl alcohol is heated with methyl magnesium iodide?

a) Methane b) Ethane c) Carbon dioxide d) Propane

404. Phenol $\xrightarrow{X}$ forms a tribromo derivative "X" is

a) Bromine in benzene b) Bromine in water

c) Potassium bromide solution d) Bromine in carbon tetrachloride at 0°C

405. Phenol is more acidic than alcohol because

a) Phenol is more soluble in polar solvents b) Alcohol does not lose hydrogen atom

c) Phenoxide ion is stabilised by resonance d) Phenoxide ion doesn't exhibit resonance

406. Which of the following is the best method for making *iso*-propylmethyl ether?

a) $CH_3I + (CH_3)_2CHOH \rightarrow$ b) $CH_3I + (CH_3)_2CHO^- \rightarrow$

c) $(CH_3)_2CHI + CH_3O^- \rightarrow$ d) $(CH_3)_2CHCl + CH_3OH \rightarrow$

407. If the boiling point of ethanol (molecular weight=46) is 78°C, what is the boiling point of diethyl ether? (molecular weight=74)

a) 100°C b) 78°C c) 86°C d) 34°C

408. An organic compound A reacts with PCl_5 to give$B$. The compound B with sodium metal gives n-butane. Thus, A and B are:

a) C_2H_5OH and C_2H_5Cl

b) C_2H_5Cl and C_2H_5ONa

c) C_3H_7OH and $CH_3CH_2CH_2OCl$

d) C_4H_9OH and C_4H_9OCl

409. Acetic acid is obtained from ethyl alcohol by the process of:

a) Distillation b) Reduction c) Fermentation d) Dehydration

410. Intermolecular dehydration of alcohols gives:

a) Alkenes b) Ketones c) Alkynes d) Ethers

411. Glycerol on warming with excess of HI:

a) 2-iodopropane b) 1-iodopropane c) 1,2,3-tri-iodopropane d) None of these

412. Cumene process is the most important commercial method for the manufacture of phenol. Cumene is
a) 1-methyl ethyl benzene b) Ethyl benzene
c) Vinyl benzene d) Propyl benzene

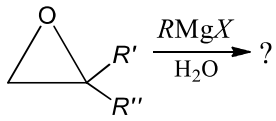
413. Which of the following alcohols cannot be oxidized by potassium dichromate in the presence of sulphuric acid?

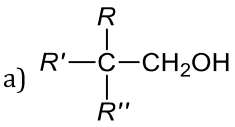
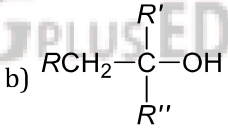
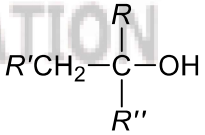
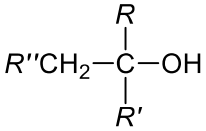
a) CH_3CH_2OH b) C_6H_5OH c) $C_6H_5CHOHCH_3$ d) $CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-OH$

414. Which of the following is stable compound?
a) $CCl_3CH(OH)_2$ b) $CH_2{=}CHOH$ c) $CH_3{-}CH(OH)_2$ d) $HC(OH)_3$

415. $(CH_3)_2\underset{\displaystyle CH_3}{\overset{|}{C}}HCHOH \xrightarrow[-H_2O]{\text{Acid}} X$

The major product obtained in this reaction is
a) $(CH_3)_2CHCH = CH_2$
b) $(CH_3)_2C = CH - CH_3$
c) 1 : 1 mixture of (a) and (b)
d) None of the above

416. 

Product obtained is
a)  b)  c)  d) 

417. The reaction involved in the oil of winter green test is salicylic acid $\xrightarrow[\text{Conc.}H_2SO_4]{\Delta}$ product. The product is treated with Na_2CO_3 solution. The missing reagent in the above reaction is
a) Phenol b) NaOH c) Ethanol d) Methanol

418. An example of a compound with functional group —O— is:
a) Acetic acid b) Methyl alcohol c) Diethyl ether d) Acetone

419. Phenol gives characteristic colouration with
a) Iodine solution b) Bromine water
c) Aqueous $FeCl_3$ solution d) Ammonium hydroxide

420. 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

421. Which are explosives?
a) Wood pulp (dynamite)
b) Cellulose nitrate (blasting gelatin)
c) Gun cotton or cellulose nitrate and Vaseline (cordite)

d) All of the above

422. Some time explosion occurs while distilling ethers. It is due to the presence of
a) Oxide b) Ketones c) Aldehyde d) Peroxides

423. Acidity of phenol is due to
a) Hydrogen bonding
b) Phenolic group
c) Benzene ring
d) Resonance stabilisation of its anion

424. Glycerol on reacting with sodium gives:
a) Disodium glycerollate
b) Monosodium glycerollate
c) Trisodium glycerollate
d) None of the above

425. The compound which reacts fastest with Lucas reagent at room temperature is
a) 1-butanol b) 2-butanol c) 2-methylpropanol d) 2-methylpropan-2-ol

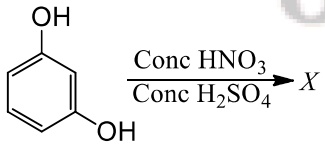
426. Mild oxidation of glycerol with $H_2O_2/FeSO_4$ gives
a) Glyceraldehyde
b) Dihydroxy acetone
c) Both (a) and (b)
d) None of the above

427. To prepare 2-propanol from CH_3MgI, the other chemical required is:
a) HCHO b) CH_3CHO c) C_2H_5OH d) CO_2

428. The first oxidation product of primary alcohol is:
a) A ketone b) An ester c) An aldehydes d) A hydrocarbon

429. Phenol is soluble in water because
a) Of weak hydrogen bonding between phenol and water molecules
b) Of intermolecular hydrogen bonding between phenol molecules
c) If has a higher boiling point than that of water
d) None of the above

430. Consider the following reaction,



product *X* is
a) Picric acid b) Styphnic acid c) Salicylic acid d) Benzoic acid

431. Glycerol on treatment with oxalic acid at 110°C forms:
a) Formic acid b) CO_2 and CO c) Allyl alcohol d) glycol

432. At 530 K, glycerol reacts with oxalic acid to produce
a) Allyl alcohol b) Formic acid c) Glyceraldehydes d) Formaldehyde

433. Absolute alcohol is prepared from rectified spirit by:
a) Fractional distillation
b) Steam distillation
c) Azeotropic distillation
d) Vacuum distillation

434. Williamson's synthesis is used to prepare
a) Diethyl ether b) Acetone c) PVC d) Bakelite

435. Anisole can be prepared by the action of methyl iodide on sodium phenate. The reaction is called
a) Wurtz's reaction
b) Williamson's reaction
c) Fittig's reaction
d) Etard's reaction

436. When *o*-or *p*-phenol sulphonic acid is treated with bromine water, the product formed is
a) 2, 4-dibromophenol
b) 2, 4, 6-tribromophenol

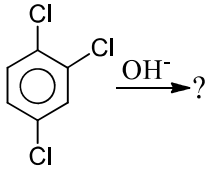
c) 3-bromophenol boric acid
d) 3, 5-dibromophenol

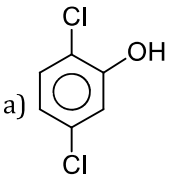
437. Esterification of alcohols involves:
a) H of alcohol and OH of acid
b) OH of alcohol and H of acid
c) OH of alcohol and OH of acid
d) H of alcohol and H of acid

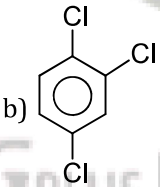
438. An organic liquid *A* containing C, H and O has a pleasant odour with a b.p. of 78°C. On boiling *A* with conc. H_2SO_4 a colourless gas is produced which decolourises bromine water and alkaline $KMnO_4$. One mole of this gas also takes one mole of H_2. The organic liquid *A* is:
a) C_2H_5Cl b) C_2H_5CHO c) C_2H_6 d) C_2H_5OH

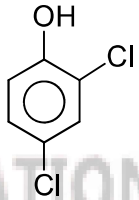
439. In the presence of an acid catalyst, two alcohol molecules will undergo dehydration to give:
a) Ester
b) Anhydride
c) Ether
d) Unsaturated hydrocarbon

440. Complete combustion of ether gives:
a) C_2H_5OH b) CO_2 and H_2O c) C_2H_4 d) C_2H_2

441. 

Product is
a) 

b) 

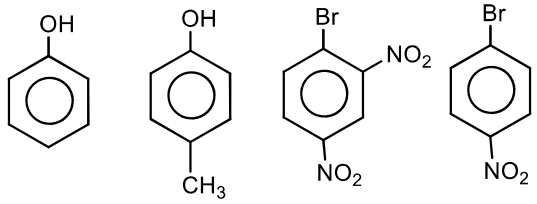
c) 

d) Both (a) and (b)

442. $CH_3CH_2OH \xrightarrow[\text{step-1}]{Cl_2} CH_3CHO \xrightarrow[\text{step-2}]{3Cl_2} Cl_3CCHO$

In above reactions the role of Cl_2 in step-1 and step-2 respectively is
a) Oxidation, chlorination
b) Reduction, chlorination
c) Oxidation, addition
d) Reduction, substitution

443. An enzyme which brings about the conversion of starch into maltose is known as:
a) Maltase b) Zymase c) Invertase d) Diastase

444. Strength of acidity is in order


(I) (II) (III) (IV)
a) II > I > III > IV b) III > IV > I > II c) I > IV > III > II d) IV > III > I > II

445. Ethyl alcohol is denatured by:
a) Methanol and formic acid
b) KCN
c) CH_3OH and C_6H_6
d) CH_3OH and pyridine

446. For the sequence of reaction,

$A \xrightarrow{C_2H_5MgI} B \xrightarrow{H_2O/H^+} tert-$ pentyl alcohol.

The compound A in the sequence is

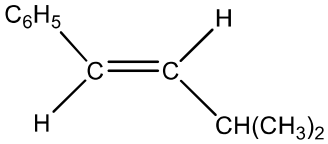
a) 2-butanone b) Acetaldehyde c) Acetone d) Propanal

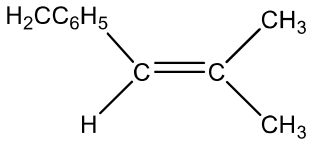
447. A compound with molecular formula $C_4H_{10}O_3$ is converted by the action of acetyl chloride to a compound with molecular weight 190. The original compound has:

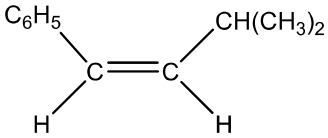
a) One OH group b) Two OH groups c) Three OH groups d) No OH group

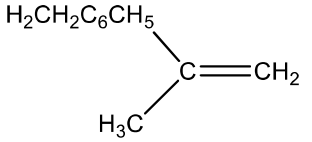
448. The main product of the following reaction is

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

a) 

b) 

c) 

d) 

449. Which of the following compound is oxidised to prepare methyl ethyl ketone?

a) 2-propanol b) 1-butanol c) 2-butanol d) Ter-butyl alcohol

450. The value of C—O—C angle in ether molecule is:

a) 180° b) 150° c) 90° d) 110°

451. What amount of bromine will be required to convert 2 g of phenol into 2, 4, 6-tribromo phenol?

a) 4.00 b) 6.00 c) 10.22 d) 20.44

452. Chlorex which is a good solvent for aromatic impurities is:

a) Dichloro dimethyl ether
b) Dichlorodiethyl ether
c) Mono chloro ether
d) Diethyl ether

453. The characteristic group of secondary alcohol is:

a) $-CH_2OH$
b) $>CHOH$
c) $>COH$
d) $-COOH$

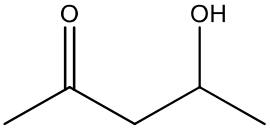
454. The compound on dehydrogenation gives a ketone. The original compound is

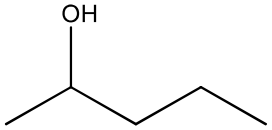
a) Primary alcohol b) Secondary alcohol c) Tertiary alcohol d) Carboxylic acid

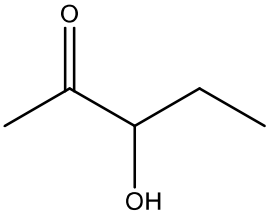
455. 1-phenyl ethanol can be prepared from benzaldehyde by the action of:

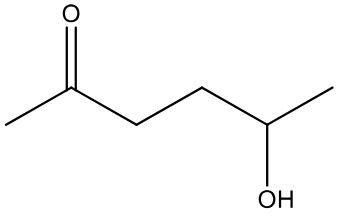
a) CH_3Br b) CH_3Br and $AlBr_3$ c) CH_3I, Mg and HOH d) C_2H_5I and Mg

456. Which one of the following will most readily be dehydrated in acidic conditions?

a) 

b) 

c) 

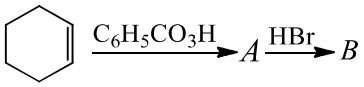
d) 

457. On reduction with $LiAlH_4$, a ketone yields:
a) Primary alcohol b) Secondary alcohol c) Tertiary alcohol d) All of these

458. The decreasing order of boiling points of 1°, 2°, 3° alcohol is:
a) $1^{\circ} > 2^{\circ} > 3^{\circ}$ b) $3^{\circ} > 2^{\circ} > 1^{\circ}$ c) $2^{\circ} > 1^{\circ} > 3^{\circ}$ d) None of these

459. The formula for vinyl alcohol is:
a) $CH_2{=}CHCH_2OH$ b) $C_6H_5CHOHCH_3$ c) $CH_2{=}COHCH_3$ d) $CH_2{=}CHOH$

460. Consider the reaction,



A and B respectively are
a) 1, 2-epoxycyclohexane, *trans*-2-bromocyclohexanol b) 1, 2-epoxycyclohexane, *cis*-2- bromocyclohexanol
c) *trans*-2 bromocyclohexanol 1,2-epoxyethane d) *cis*-2- bromocyclohexanol 1,2-epoxyethane

461. Alcoholic fermentation of sugar gives 3% glycerol. The yield can be increased to 25% if fermentation is made in presence of:
a) Na_2SO_4 b) Na_3PO_4 c) Na_2S d) None of these

462. The reaction,

$$CH_3COOH + HOC_2H_5 \xrightarrow[HCl]{Dry} CH_3COOC_2H_5 + H_2O$$

is called :
a) Fischer-Speier esterification
b) Clemmensen condensation
c) Claisen condensation
d) None of the above

463. When isopropyl alcohol vapours are passed over heated copper it gives:
a) Acetone b) Ethyl alcohol c) Methyl alcohol d) Acetaldehyde

464. Glycol on oxidation with....gives oxalic acid.
a) Acidic $KMnO_4$ b) Acidic $K_2Cr_2O_7$ c) Nitric acid d) HIO_4

465. When compound X is oxidised by acidified potassium dichromate, compound Y is formed. Compound Y on reduction with $LiAlH_4$ gives X. X and Y respectively are
a) C_2H_5OH, CH_3COOH
b) CH_3COCH_3, CH_3COOH
c) C_2H_5OH, CH_3COCH_3
d) CH_3CHO, CH_3COCH_3

466. The reaction of ethanol with H_2SO_4 does not give:
a) C_2H_4 b) $C_2H_5OC_2H_5$ c) C_2H_2 d) $C_2H_5HSO_4$

467. Lucas reagent produces cloudiness immediately with:
a) *n*-butanol b) Isopropanol c) *n*-propanol d) Tertiary butanol

468. Primary alcohols can be obtained from the reaction of the *R*MgX with:
a) HCHO b) H_2O c) CO_2 d) CH_3CHO

469. The major product obtained on interaction of phenol with sodium hydroxide and carbon dioxide is
a) Benzoic acid b) Salicyladehyde c) Salicylic acid d) Phthalic acid

470. Chlorobenzene $\xrightarrow[X]{\text{Reaction}}$ Phonel $\xrightarrow[Y]{\text{Reaction}}$
Salicyladehyde X and Y reactions are respectively.....
a) Fires rearrangement and Kolbe-Schmidt b) Cumene and Reimer-Tiemann
c) Dow and Reimer-Tiemann d) Dow and Friedel-Craft

471. Phenol $\xrightarrow{NaNO_2/H_2SO_4} B \xrightarrow{H_2O} C \xrightarrow{NaOH} D$
Name of the above reaction is
a) Liebermann's reaction b) Phthalein fusion test

c) Reimer-Tiemann reaction d) Schotten-Baumann reaction

472. Vinyl carbinol is:

a) $HOH_2C—CH=CH_2$ b) $CH_3C(OH)=CH_2$ c) $CH_3—CH=CH—OH$ d) $CH_3—\underset{\displaystyle CH_3OH}{\overset{\displaystyle CH_3—C=CH_2}{|}}$

473. Choose the incorrect statement

a) Ordinary ethyl alcohol is known as rectified spirit

b) The alcohol sold in the market for polishing etc, is known as methylated spirit

c) Absolute alcohol is 100% ethanol

d) Power alcohol is 100% ethanol

474. The reaction of ethanol with concentrated H_2SO_4 at room temperature gives

a) $CH_3CH_2OH_2^+HSO_4^-$ b) $CH_3CH_2OSO_2OH$

c) $CH_3CH_2OCH_2CH_3$ d) $H_2C = CH_2$

475. $H_2C\!-\!CH_2$ (O) $\xrightarrow[(ii)\ H_2O]{(i)\ CH_3MgCl} X \xrightarrow[(ii)H_2O]{(i)CH_3MgCl} X$

The product obtained in this reaction is

a) CH_3CH_2OH b) $(CH_3)_2CHOH$

c) $CH_3CH_2CH_2OH$ d) $HO-CH_2-CH_2-CH_2-CH_2-OH$

476. When ethylene glycol is heated with a mixture of concentrated HNO_3 and concentrated H_2SO_4, it produces

a) $\begin{matrix}COOH\\|\\COOH\end{matrix}$ b) $CO_2 + H_2$ c) $\begin{matrix}CH_2ONO_2\\|\\CH_2ONO_2\end{matrix}$ d) $\begin{matrix}CH_2ONO_2\\|\\CH_2OH\end{matrix}$

477. Cyclohexanol on reaction with PBr_3 in presence of pyridine gives

a) Bromocyclohexane b) Bromocyclohexane c) 1-bromocyclohexanol d) None of these

478. On treatment with a concentrated solution of zinc chloride in concentrated HCl at room temperature, an alcohol immediately gives, an oily product. The alcohol can be

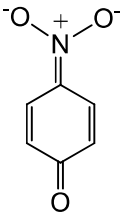
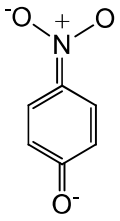
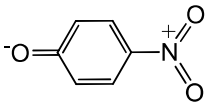
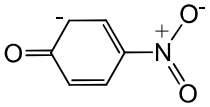
a) $C_6H_5CH_2OH$

b) $CH_3CHOHCH_3$

c) $CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{C}}}-OH$

d) Any of these

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

a)  b)  c)  d) 

480. Ethylene glycol gives oxalic acid on oxidation with

a) Acidified $K_2Cr_2O_7$ b) Acidified $KMnO_4$ c) Alkaline $KMnO_4$ d) Periodic acid

481. In the reaction,

$CH_3-\underset{\displaystyle CH_2}{\overset{\displaystyle CH_3}{\overset{|}{C}}}-CH_2 \xrightarrow{Conc.H_2SO_4} A$ the product *A* is

a) $CH_3-\overset{\overset{OH}{|}}{\underset{\underset{CH_3}{|}}{C}}=CH_2$ b) $CH_3-\overset{\overset{H}{|}}{\underset{\underset{H}{|}}{C}}=C-CH_3$ c) $CH_3-CH_2-\overset{\overset{CH_3}{|}}{C}=O$ d) $CH_3-\overset{\overset{CH_3}{|}}{CH}-CHO$

482. Diethyl ether may be regarded as anhydride of:
a) C_2H_5COOH b) C_2H_5OH c) C_2H_5CHO d) $C_2H_5COOC_2H_5$

483. Glycol reacts withPCl_3 and gives ethylene dichloride. What will be the product, if it reacts with $P + I_2$?
a) Ethylene iodide b) Ethylene iodohydrin c) Ethylene d) None of these

484. Methyl alcohol reacts with phosphorus trichloride to form:
a) Methane b) Methyl chloride c) Acetyl chloride d) Dimethyl ether

485. Arrange the following in order of decreasing acidic strength. *p*-nitrophenol (I), *p*-cresol (II), *m*-cresol (III), phenol (IV)
a) I > II > III > IV b) IV > III > II > I c) I > III > II > IV d) III > II > I > IV

486. A diazonium chloride reacts with ϕOH to give an azodye. The reaction is called
a) Diazotisation b) Condensation c) Coupling d) Reduction

487. Which alcohol is most acidic?
a) Methanol b) Ethanol c) Isopropyl alcohol d) t-butyl alcohol

488. Which reagent can distinguish C_2H_5OH and ϕ OH?
a) $SOCl_2$ b) CH_3COCl c) $(CH_3CO)_2O$ d) CH_3COOH

489. *Iso*-butyl alcohol $\xrightarrow{P/I_2}\xrightarrow{AgNO_2}\xrightarrow{HNO_2}\xrightarrow{NaOH} A$
True statement about *A* is
a) Blue coloured solution b) Blue precipitate
c) Red precipitate d) Red coloured solution

490. Acetone on reduction gives:
a) CH_3COOH b) CH_3CHO c) C_2H_5OH d) $(CH_3)_2CHOH$

491. Sodium ethoxide and ethyl chloride on heating will give:
a) Ether b) Ethyl alcohol c) Acetaldehyde d) Acetic acid

492. Pinacol is
a) 3-methylbutan-2-ol b) 2, 3-dimethyl-2, 3-butanediol
c) 2, 3-dimethyl-2-propanone d) None of the above

493. The product in the reaction is:
$C_2H_5OH \xrightarrow{P+I_2} A \xrightarrow[Ether]{Mg} B \xrightarrow{HCHO} C \xrightarrow{H_2O} D$
a) Propanal b) Butanal c) *n*-butanol d) *n*-propanol

494. In esterification of an acid, the other reagent is:
a) Aldehyde b) Alcohol c) Amine d) Water

495. C_2H_5OH and C_2H_5OH can be distinguished by
a) $Br_2 + H_2O$ b) $FeCI_3$ c) I_2 + NaOH d) Both (b) and (c)

496. Identify (*Z*) in the series:
$CH_2{=}CH_2 \xrightarrow{HBr} (X) \xrightarrow{Hydrolysis} (Y) \xrightarrow[I_2\ (excess)]{NaOH} (Z)$
a) C_2H_5I b) C_2H_5OH c) CHI_3 d) CH_3CHO

497. Phenol can be converted to *o*-hydroxybenzaldehyde by
a) Kolbe's reaction b) Reimer-Tiemann reaction
c) Wurtz reaction d) Cannizaro reaction

498. An organic compound '*X*' with molecular formula, C_7H_8O is insoluble in aqueous $NaHCO_3$ but dissolves in NaOH. When treated with bromine water '*X*' rapidly gives '*Y*' $C_7H_5OBr_3$.
The compounds '*X*' and '*Y*' respectively, are
a) Benzyl alcohol and 2, 4, 6-tribromo-3-methoxy benzene
b) Benzyl alcohol and 2, 4, 6-tribromo-3-methyl phenol
c) *o*-cresol and 3, 4, 5-tribromo-2-methyl phenol

d) Methoxybenzene and 2, 4, 6-tribromo-3-methoxy benzene

499. Which of the following compound would not evolve CO_2 when treated with $NaHCO_3$ solution?
a) Salicylic acid b) Phenol c) Benzoic acid d) 4-nitrobenzoic acid

500. For which pair iodoform test cannot be used as distinction test?
a) Propanol-1 and propanol-2
b) Butanol-2 and 2-methyl propan-2-ol
c) Butanol-1 and butanol-2
d) Pentanol-1 and pentanol-3

501. Tonics usually contain small amount of:
a) Formalin b) Vinegar c) Alcohol d) Ether

502. Primary, secondary and tertiary alcohols can be distinguished by performing
a) Beilstein's test b) Victor Meyer's test c) Fehling's solution test d) Hofmann's test

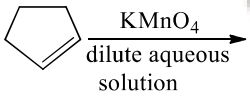
503. Ethanol reacts with thionyl chloride to give ethyl chloride and:
a) S, SO_2 b) SO_2, HCl c) Cl_2, SO_3 d) SO_3, HCl

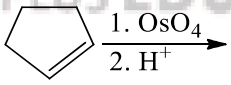
504. The product C in the following sequence of reaction,
$C_2H_5Br \xrightarrow{NaOH\ (aq)} A \xrightarrow{Na} B \xrightarrow{CH_3I} C$ is:
a) Butane b) Ethane c) Methyl ethyl ether d) propane

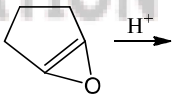
505. Which of the following is an anaesthetic?
a) Ether b) Thiobarburates c) Trichloromethane d) All of these

506. In the reaction,
$C_2H_5OH \xrightarrow[300°C]{Cu} X$
(vapour)
The molecular formula of X is
a) C_4H_6O b) $C_4H_{10}O$ c) C_2H_4O d) C_2H_6

507. In which of the following bond angles on sp^3-hybridized are not contracted due to lone pair of electron?
a) OF_2 b) H_2O c) CH_3OCH_3 d) CH_3OH

508. By which the following reactions can *trans*-cyclopentane-1, 2-diol be obtained?
a) 

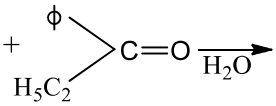
b) 

c) 

d) None of these

509. A compound X, when boiled with Na_2CO_3 solution gives glycol as the product. What is X ?
a) Ethylene
b) Ethylene oxide
c) Ethyl bromide
d) Ethyl hydrogen sulphate

510. Glycerol is present as a triester in:
a) Petroleum b) Kerosene oil c) Vegetable oil and fats d) Naphtha

511. To prepare $\phi - \underset{\underset{OH}{|}}{\overset{\overset{C_2H_5}{|}}{C}} - C_2H_5$ by $RMgX$ which is the incorrect pair?
a) $\phi\ MgBr + (C_2H_5)_2CO \xrightarrow[H_2O]{}$
b) $C_2H_5MgBr +$  $\xrightarrow[H_2O]{}$
c) $C_2H_5MgBr + \phi COCH_2CH_3 \xrightarrow[H_2O]{}$

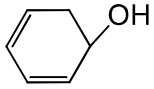
d) $\phi MgBr + C_2H_5COCH_3 \xrightarrow[H_2O]{}$

512. Which alcohol cannot be oxidized by MnO_2?

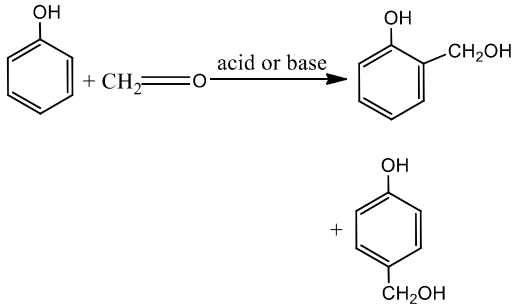
a) $CH_2 = CH - CH_2CH_2OH$

b) $CH_3 - CH = CH - CH_2OH$

c) ϕCH_2OH

d) 

513. The reaction,



Is called

a) Laderer Mannasse reaction

b) Claisen condensation

c) Benzoin condensation

d) Etard reaction

514. An alcohol is not oxidised in alkaline or neutral solution but in acidic solution it is turned first to acetone and then to acetic acid. It is a:

a) Primary alcohol

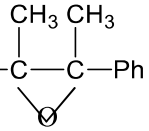
b) Secondary alcohol

c) Tertiary alcohol

d) None of these

515. In the reaction $Ph - \underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}} - Ph \xrightarrow{Conc.H_2SO_4} A$ The product A is

a) $Ph - \underset{}{\overset{\overset{CH_3}{|}}{C}} = \overset{\overset{CH_3}{|}}{C} - Ph$

b) 

c) $Ph - \underset{\underset{Ph}{|}}{\overset{\overset{CH_3}{|}}{C}} - \overset{\overset{O}{||}}{C} - CH_3$

d) $Ph - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3O}{|}}{C}} - \overset{\overset{O}{||}}{C} - Ph$

516. Which reagent will convert propionic acid to propanol-1?

a) $KMnO_4$

b) $LiAlH_4$

c) Cr_2O_3

d) MnO_2

517. Which of the following is a gas?

a) Methane thiol

b) Ethane thiol

c) Isobutyl thiol

d) Propyl thiol

518. Alcohols may behave as:

a) Bronsted acid

b) Lewis base

c) Neutral

d) All of these

519. The reaction;

$RCOOH \xrightarrow{C_2H_5OH+Na} RCH_2OH$ is called:

a) Corey House reaction

b) Bonveault-Blanc reaction

c) Clemmensen reduction

d) None of the above

520. Absolute alcohol is prepared by

a) Vacuum distillation

b) Azeotropic distillation

c) Steam distillation

d) None of the above

521. On heating glycerol with conc. H_2SO_4, a compound is obtained which has bad odour. The compound is:

a) Acrolein b) Formic acid c) Allyl alcohol d) Methyl isocyanide

522. Pyroligneous acid contains:

a) CH_3COOH (10 %), CH_3Ob) C_2H_5OH (10 %), CH_3OHc) CH_3COCH_3 (10%), C_2H_5d) None of the above

523. Ethyl alcohol reacts with HCl but not with HCN because:

a) C_2H_5OH is weak base and HCN is weak base

b) C_2H_5OH is strong acid and HCN is weak acid

c) HCl is strong acid and C_2H_5OH is weak base

d) None of the above

524. When wine is put in air it becomes sour due to:

a) Oxidation of C_2H_5OH into CH_3COOH

b) Bacteria

c) Virus

d) Formic acid formation

525. Dunstan' s test is used for identification of

a) Acetone b) Ethanol c) Glycerol d) Glycol

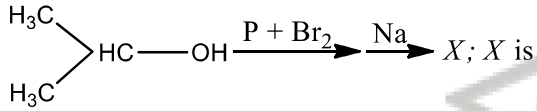
526. An alcohol on oxidation is found to give CH_3COOH and CH_3CH_2COOH. The alcohol is:

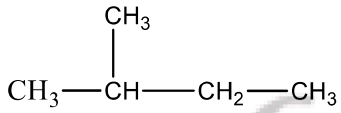
a) $CH_3CH_2CH_2OH$ b) $(CH_3)_2C(OH)CH_2CH_3$ c) $CH_3(CH_2)_2CHOH$ d) $CH_3CH(OH)CH_2CH_2CH_3$

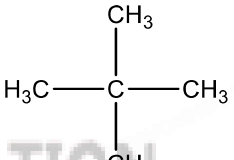
527. The enzymes which are used to convert starch into ethyl alcohol are

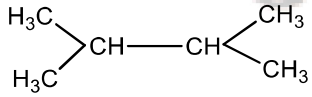
a) Maltase, diastase b) Diastase, maltase, zymase

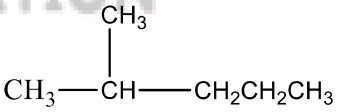
c) Invertase, zymase d) Invertase, diastase, maltase

528. 

a) 

b) 

c) 

d) 

529. Ethyl alcohol can be prepared from Grignard reagent by the reaction of

a) HCHO b) R_2CO c) RCN d) $RCOCl$

530. The correct order of the solubility of different alcohols in water is

a) Ethanol > *n*-propanol > *n*-butyl alcohol

b) *n*-propyl alcohol > ethyl alcohol > *n*-butyl alcohol

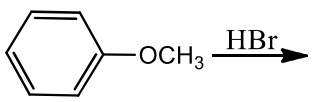
c) ethyl alcohol > *n*-butyl alcohol > *n*-propyl alcohol

d) *n*-butyl alcohol > *n*-propyl alcohol > ethyl alcohol

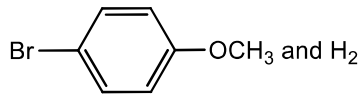
531. Germinated Barley (an enzyme) is a source of enzyme:

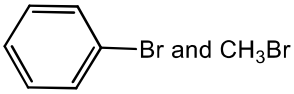
a) Zymase b) Diastase c) Maltase d) Invertase

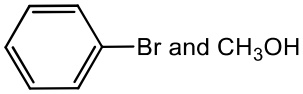
532. In the reaction,

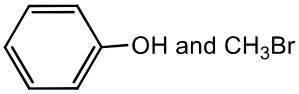


The products are

a) 

b) 

c) 

d) 

533. Methylphenyl ether can be obtained by reacting
   a) Phenolate ions and methyl iodide
   b) Methoxide ions and bromobenzene
   c) Methanol and phenol
   d) Bromobenzene and methyl bromide

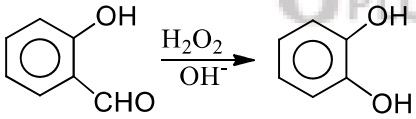
534. $C_6H_5 - CH = CHCHO \xrightarrow{X} C_6H_5CH = CHCH_2OH$
   In the above sequence X can be
   a) H_2/Ni
   b) $NaBH_4$
   c) $K_2Cr_2O_7/H^+$
   d) Both (a) and (b)

535. To distinguish between salicylic acid and phenol one can use
   a) $NaHCO_3$ solution b) 5% NaOH solution c) Neutral $FeCl_3$ d) Bromine water

536. Diethyl ether finds its use in medicine as:
   a) Pain killer b) Hypnotic c) Antiseptic d) Anaesthetic

537. Ethyl chloride reacts with sodium ethoxide to form a compound A. Which of the following reactions also yields A?
   a) $C_2H_5Cl, KOH\ (alc.), \Delta$
   b) $2C_2H_5OH, \text{conc.}\ H_2SO_4, 140°C$
   c) $C_2H_5Cl, Mg(\text{dry ether})$
   d) $C_2H_2, \text{dil}\ H_2SO_4, HgSO_4$

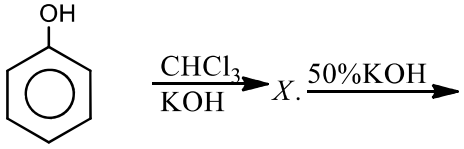
538. In the following sequence of reactions,
   $CH_3CH_2OH \xrightarrow{P+I_2} A \xrightarrow[\text{ether}]{Mg} B \xrightarrow{HCHO} C \xrightarrow{H_2O} D$
   The compound 'D' is
   a) Butanal b) n-butyl alcohol c) n-propyl alcohol d) Propanal

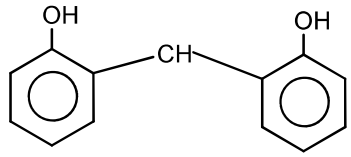
539. 

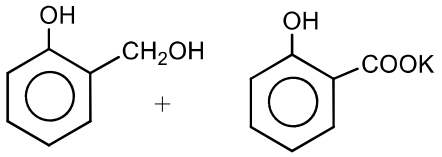
   This reaction is called
   a) Reimer-Tiemann reaction
   b) Liebermann's nitroso reaction
   c) Dakin reaction
   d) Lederer -Manasse reaction

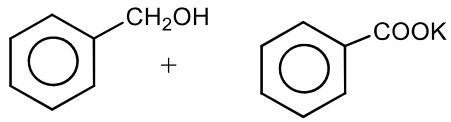
540. Carbocation is not the intermediate in
   a) Hydroboration-oxidation of an alkene
   b) Oxymercuration-demercuration of an alkene
   c) Reation of HCl with CH_3CH_2OH
   d) All of the above

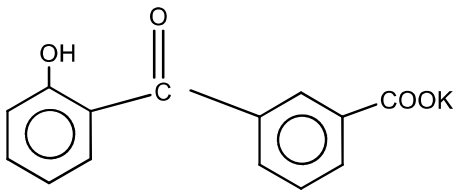
541. The number of isomeric alcohols of formula $C_4H_{10}O$ is:
   a) 2 b) 4 c) 7 d) 8

542. The final product of the following reaction is/are


a) 

b) 

c) 

d) 

543. Anisole is the product obtained from phenol by the reaction known as
a) Coupling b) Etherification c) Oxidation d) Esterification

544. Propan-1-ol can be prepared from propane by
a) H_2O/H_2SO_4 b) $Hg(OAc)_2H_2O$ followed by $NaBH_4$
c) B_2H_6 followed by H_2O_2 d) CH_3CO_2H/H_2SO_4

545. Lubricant used in watch is:
a) Coconut oil b) Pine oil c) Animal oil d) Glycerol

546. Methyl alcohol on oxidation with acidified $K_2Cr_2O_7$ gives:
a) CH_3COCH_3 b) CH_3CHO c) HCOOH d) CH_3COOH

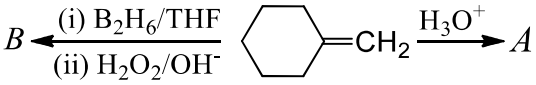
547. Lucas reagent is a mixture of:
a) Conc. HCl + anhydrous $ZnCl_2$
b) Conc. HCl + hydrous $ZnCl_2$
c) Conc. HNO_3 + hydrous $ZnCl_2$
d) Conc. HNO_3 + anhydrous $ZnCl_2$

548. If methanol vapour is passed over heated copper at 300°C, it forms formaldehyde by:
a) Hydrogenation b) Dehydrogenation c) Dehydration d) Oxidation

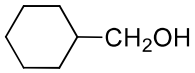
549. Terylene is formed by the reaction of one of the following alcohols:
a) 2-chloroethanol b) 1,2,3-propanetriol c) Ethanediol d) Phenol

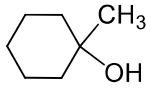
550. Alcoholic fermentation by starch or sugar is brought about by:
a) CO_2 b) Sodium bicarbonate c) Yeast d) phosphates

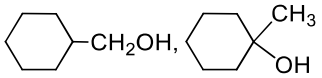
551. General formula for alcohols is:
a) $\rangle COH$ b) $\rangle CHOH$ c) $-CH_2OH$ d) All of these

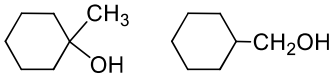
552. 

A and *B* respectively are

a) Both 

b) Both 

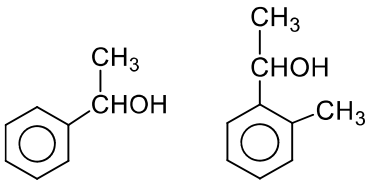
c) 

d) 

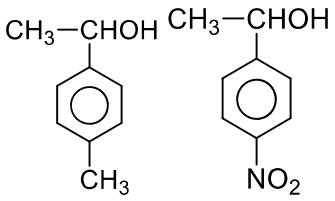
553. When phenol reacts with phthalic anhydride in presence of H_2SO_4 and heated and hot reaction mixture is poured in NaOH solution, then product formed is
a) Alizarin b) Methyl orange c) Fluorescein d) Phenolphthalein

554. Correct order of dehydration of

IX. (b)



(c) (d)

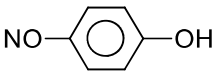
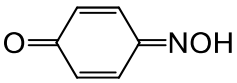


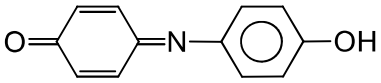
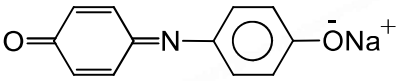
a) $A > B > C > D$ b) $B > C > A > D$ c) $D > A > C > A$ d) $D > A > B > C$

555. The following reaction is known as

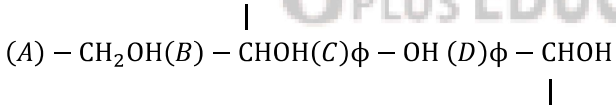
a) Perkin reaction b) Gattermann reaction
c) Kolbe reaction d) Gattermann-aldehyde reaction

556. In the Liebermann test for phenols, the blue or green colour produced is due to the formation of

a)  b) 

c)  d) 

557. Four hydroxy compounds have functional groups as shown



The purple colour with $FeCl_3$ will be given by

a) A only b) A and B c) C only d) A, B, C and D

558. Ether in contact with air for a long time form peroxides. The presence of peroxide in either can be tested by adding Fe^{2+} ion and then adding

a) KCN b) $SnCl_2$ c) $HgCl_2$ d) KCNS

559. Fermentation is:

a) Exothermic b) Endothermic c) Reversible d) None of these

560. Which could not be obtained from wood?

a) CH_3OH b) C_2H_5OH c) Wood tar d) Wood charcoal

561. 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

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

a) CH_3CH_2COOH b) $CH_3CH_2COOCH_2CH_3$ c) CH_3COOCH_3 d) $CH_3COOC_2H_5$

563. Which of the following is insoluble in alcohol?

a) Resins and varnishes b) Soaps and varnishes c) Rubbers and plastics d) Dyes and drugs

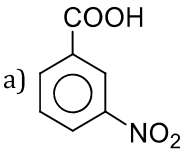
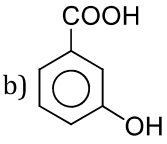
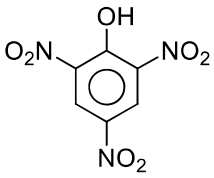
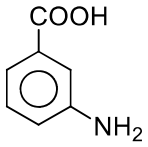
564. 1-propanol and 2-propanol can be distinguished by

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 concentrated H_2SO_4 followed by reaction with Fehling solution

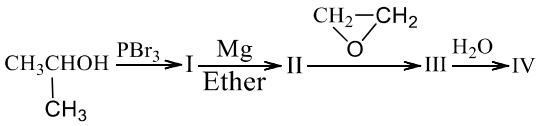
565. Which of the following does not react with sodium metal?
a) $(CH_3)_2O$ b) CH_3CH_2OH c) CH_3COOH d) C_6H_5OH

566. Purity of ether before using it as anaesthetic agent is tested by:
a) KI + starch b) $CuSO_4$ c) H_2SO_4 d) None of these

567. Alcoholic beverages contain
a) Isopropyl alcohol b) *n*-propyl alcohol c) Ethyl alcohol d) Methyl alcohol

568. Picric acid is
a) 
b) 
c) 
d) 

569. The final product (IV) in the sequence of reactions



is
a) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CHOCH_2CH_2OH}}$ b) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CHCH_2CH_2Br}}$
c) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2CH_2OH$ d) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CHOCH_2CH_3}}$

570. The products of combustion of an aliphatic thiol (*RSH*) at 298 K are
a) $CO_2(g), H_2O(g)$ and $SO_2(g)$ b) $CO_2(g), H_2O(l)$ and $SO_2(g)$
c) $CO_2(l), H_2O(l)$ and $SO_2(g)$ d) $CO_2(g), H_2O(l)$ and $SO_2(l)$

571. During alcoholic fermentation inorganic salts like ammonium sulphate or ammonium phosphate are added:
a) To decreases the freezing point of solution
b) Which act as food for ferment cells
c) Which prevent the growth of undesirable bacteria
d) Which produce desirable enzymes

572. To obtain unsaturated alcohols from unsaturated aldehydes the following reagent is used for reduction:
a) Na amalgam/H_2O b) Dil. H_2SO_4 c) Zn/HCl d) $LiAlH_4$

573. Hydroboration oxidation of 4-methyl octene would give
a) 4-methyl octanol b) 2-methyl decane
c) 4-methyl heptanol d) 4-methyl-2-actanone

574. $Z \xrightarrow{PCl_5} X \xrightarrow{\text{Alc.KOH}} Y \xrightarrow[\text{2. } H_2O;\ \text{boil}]{\text{1. Conc. } H_2SO_4} Z$ is :
a) $CH_3—CH_2—CH_2—OH$ b) $CH_3-\underset{\displaystyle OH}{\underset{|}{CH}}-CH_3$ c) $(C_2H_5)_3\,C—OH$ d) $CH_3—CH{=}CH_2$

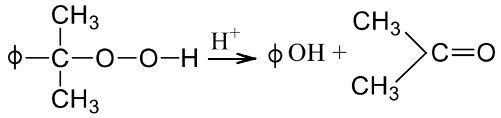
575. The general molecular formula, which represents the homologous series of alkanols is:
a) $C_nH_{2n+1}O$ b) $C_nH_{2n+2}O$ c) $C_nH_{2n}O_2$ d) $C_nH_{2n}O$

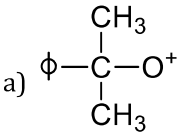
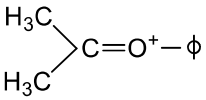
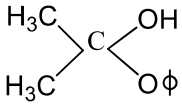
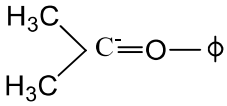
576. On reacting with neutral ferric chloride, phenol gives
a) Red colour b) Blue colour c) Violet colour d) Green colour

577. There are four alcohols P, Q, R and S which have 3, 2, 1 and zero alpha hydrogen atom(s). Which one of the following will not respond to Viktor-Meyer's test?

a) P b) Q c) R d) S

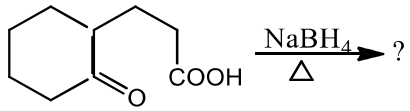
578. Which doesn't form in the acid catalysed rearrangement of cumene hydroperoxide?

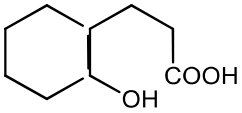
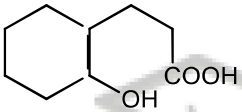
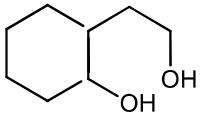


a)  b)  c)  d) 

579. Ethanol is more soluble in water but ether is less soluble because:

a) Ethanol forms strong hydrogen bonds in water whereas ether forms weaker hydrogen bonding
b) Ether is more volatile than ethanol
c) The molecular weight of ether is more than that of ethanol
d) None of the above

580. 

a)  b)  c)  d)