47. Proof spirit contains about:
(a) 48% alcohol by mass
(b) 10% alcohol by mass
(c) 5% alcohol by mass
(d) 90% alcohol by mass

48. 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

49. The most important ingredient of dynamite is:
(a) nitrobenzene (b) glycerine trinitrate
(c) nitroaniline (d) nitrosobenzene

50. 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 $ZnCl_2$

51. Alcoholic fermentation by starch or sugar is brought about by:
(a) CO_2 (b) sodium bicarbonate
(c) yeast (d) phosphates

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

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

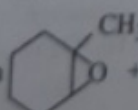
(a) $CH_3—CH_2—CH_2OH$
(b) $CH_3—\underset{\displaystyle OH}{\underset{|}{CH}}—CH_3$
(c) $CH_3—O—CH_2—CH_3$
(d) $CH_3—CH_2—CHO$

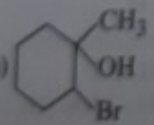
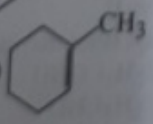
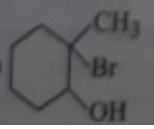
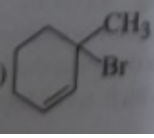
53. Identify (*Z*) in the following series,

$$\text{Ethanol} \xrightarrow{PBr_3} (X) \xrightarrow[KOH]{\text{alc.}} (Y) \xrightarrow[\text{(ii) } H_2O;\ \Delta]{\text{(i) } H_2SO_4/\text{room temp.}} (Z)$$

(a) $CH_2=CH_2$
(b) $CH_3—CH_2—OH$
(c) $CH_3—CH_2—O—CH_2—CH_3$
(d) $CH_3—CH_2—SO_3H$

54. 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

55. The product of the reaction  + HBr is :

(a) 
(b) 
(c) 
(d) 

56. 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 molar mass of ether is more than that of ethanol
(d) none of the above

57. Glycerol is present as a triester in:
(a) petroleum (b) kerosene oil
(c) vegetable oil and fats (d) naphtha

58. 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

59. The first oxidation product of primary alcohol is:
(a) a ketone (b) an ester
(c) aldehydes (d) a hydrocarbon

60. 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*

61. 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 $Al(OH)_3$

62. 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

63. Primary alcohols can be obtained from the reaction of the *R*Mg*X* with:
(a) HCHO (b) H_2O
(c) CO_2 (d) CH_3CHO

64. Terylene is formed by the reaction of one of the following alcohols:
(a) 2-chloroethanol (b) 1,2,3-propanetriol
(c) ethanediol (d) phenol

65. Formation of diethyl ether from ethanol is based on a:
(a) dehydrogenation reaction
(b) hydrogenation reaction
(c) dehydration reaction
(d) heterolytic fission reaction

66. If methanol vapour is passed over heated copper at 300°C, it forms formaldehyde by:
(a) hydrogenation (b) dehydrogenation
(c) dehydration (d) oxidation

67. The red coloured compound formed during Victor Meyer's test for ethanol is :

(c) which prevent the growth of undesirable bacteria
(d) which produce desirable enzymes

91. Saccharification is the process of conversion of:
(a) sugar solution into alcohol
(b) alcohol into starch
(c) starch into alcohol
(d) starch into sugar

92. 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) $C_2H_5I + CH_3OH$

93. Dunstan's test is used for identification of:
(a) acetone (b) alcohol
(c) glycerol (d) carbonyl compound

94. Lubricant used in watch is:
(a) coconut oil (b) pine oil
(c) animal oil (d) glycerol

95. Nobel's oil is:
(a) fire extinguisher (b) insecticide
(c) explosive (d) detergent

96. Which of the following is an anaesthetic?
(a) Ether
(b) Thiobarburates
(c) Trichloromethane
(d) All of the above

97. Primary amine on treatment with $NaNO_2$ and HCl yields:
(a) nitro compound (b) ammonia
(c) secondary alcohol (d) primary alcohol

98. 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

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

100. Identify (Z) in the series:

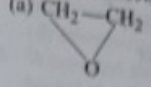
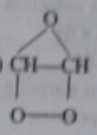
$$CH_2=CH_2 \xrightarrow{HBr} (X) \xrightarrow{\text{Hydrolysis}} (Y) \xrightarrow[I_2 \text{ (excess)}]{NaOH} (Z)$$

(a) C_2H_5I (b) C_2H_5OH
(c) CHI_3 (d) CH_3CHO

101. When acetamide is treated with $LiAlH_4$..... is formed.
(a) ethanol (b) acetic acid
(c) formic acid (d) methanol

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

103. 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

104. Which of the following is an alkoxide?
(a)  (b) $CH_3CH_2CH_2CH_2ONa$
(c) $CH_2OH \cdot CH_2OH$ (d) 

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

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

(a) propyne (b) propene
(c) propanal (d) propane

106. $Z \xrightarrow{PCl_5} X \xrightarrow{\text{alc. KOH}} Y \xrightarrow[2.\ H_2O;\ \text{boil}]{1.\ \text{conc. } H_2SO_4} Z$ is :
(a) $CH_3-CH_2-CH_2-OH$
(b) $CH_3-\underset{\displaystyle OH}{\underset{|}{CH}}-CH_3$
(c) $(C_2H_5)_3C-OH$
(d) $CH_3-CH=CH_2$

107. Which one among the following is Williamson's synthesis?
(a) $(CH_3)_3C-O \xrightarrow[\text{conc. HCl}]{Zn-Hg} CH_3-CH_2-CH_3$
(b) $CH_3-CHO \xrightarrow[-H_2O]{\text{dil. NaOH}} CH_3-CH=CH-CHO$
(c) $C_2H_5I + C_2H_5ONa \longrightarrow C_2H_5 \cdot O \cdot C_2H_5 + NaI$
(d) $HCHO \xrightarrow{NaOH} HCOONa + CH_3OH$

108. In the presence of an acid catalyst, two alcohol molecules will undergo dehydration to give:
(a) ester
(b) anhydride
(c) ether
(d) unsaturated hydrocarbon

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

110. 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

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

112. Acetic acid and methanol are obtained on a large scale by destructive distillation of:
(a) wood (b) coal
(c) turpentine oil (d) CH_3COOH