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CHEMISTRY TEST - CHAPTER 18: ALCOHOLS AND PHENOLS

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. Alcohols are aliphatic organic compounds containing the functional group:	$-NH_2$	–CHO	–OH (hydroxyl)	–COOH	○○●○
2. The general formula of alcohols is:	R–CHO	R–COOH	R–OH	R–O–R	○○●○
3. Alcohols are widely used in making:	only fertilisers	perfumes and tinctures	only plastics	only metals	○●○○
4. Alcohols containing one –OH group are called:	monohydric alcohols	trihydric alcohols	polyhydric alcohols	dihydric alcohols	●○○○
5. Alcohols containing two or more –OH groups are called:	polyhydric alcohols	monohydric alcohols	phenols	ethers	●○○○
6. Ethane-1,2-diol is commonly called:	glycerol	phenol	glycol	methanol	○○●○
7. Propane-1,2,3-triol is commonly called:	isopropanol	glycerol	glycol	ethanol	○●○○
8. Monohydric alcohols are classified into how many families?	4	2	3	5	○○●○
9. In primary alcohols, the carbon bearing the –OH group is attached to:	one alkyl group	three alkyl groups	two alkyl groups	no alkyl group only	●○○○
10. In secondary alcohols, the carbon bearing the –OH group is attached to:	four alkyl groups	one alkyl group	three alkyl groups	two alkyl groups	○○○●
11. In tertiary alcohols, the carbon bearing the –OH group is attached to:	three alkyl groups	one alkyl group	two alkyl groups	no alkyl group	●○○○
12. Which of the following is a primary alcohol?	2-Methylpropan-2-ol	Butan-2-ol	Ethanol	Propan-2-ol	○○●○
13. Which of the following is a secondary alcohol?	2-Methylpropan-2-ol	Methanol	Propan-2-ol	Propan-1-ol	○○●○
14. Which of the following is a tertiary alcohol?	Butan-2-ol	Butan-1-ol	2-Methylpropan-2-ol	Ethanol	○○●○

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Questions	A	B	C	D	A B C D
15. Isopropyl alcohol is the common name of:	propanone	propan-2-ol	propan-1-ol	propanal	○●○○
16. Tert-butyl alcohol is the common name of:	butan-1-ol	2-methylpropan-2-ol	2-methylpropan-1-ol	butan-2-ol	○●○○
17. Alcohols can be produced by the electrophilic addition of steam to an alkene in the presence of:	alumina	phosphoric acid catalyst	platinum	nickel catalyst	○●○○
18. The hydration of ethene to ethanol is carried out at about:	100 °C and 1 atm	300 °C and 60–70 atm	1000 °C and 100 atm	25 °C and 1 atm	○●○○
19. The hydration of ethene gives:	ethanol	ethanoic acid	ethanal	ethane	●○○○
20. Treating an alkene with cold dilute acidified $KMnO_4$ gives a:	diol	carboxylic acid	ketone	monohydric alcohol	●○○○
21. Ethene reacts with cold dilute acidified $KMnO_4$ to give:	ethanal	ethanol	ethane-1,2-diol	ethanoic acid	○○●○
22. The purple colour of $KMnO_4$ in the reaction with alkenes:	turns blue	remains unchanged	becomes darker	is discharged	○○○●
23. Halogenoalkanes heated with aqueous NaOH give:	carboxylic acids	alcohols	alkenes	aldehydes	○●○○
24. Aldehydes and ketones can be reduced to alcohols using:	dilute HCl	$KMnO_4$	$NaBH_4$ or $LiAlH_4$	$K_2Cr_2O_7$	○○●○
25. Reduction of an aldehyde gives a:	secondary alcohol	primary alcohol	carboxylic acid	tertiary alcohol	○●○○
26. Reduction of a ketone gives a:	tertiary alcohol	primary alcohol	secondary alcohol	carboxylic acid	○○●○
27. Carboxylic acids and esters can be reduced to alcohols using:	$NaBH_4$ in water	$LiAlH_4$	dilute HCl	$KMnO_4$	○●○○
28. Which reducing agent is strong enough to reduce carboxylic acids?	H_2O	$NaBH_4$	dilute acid	$LiAlH_4$	○○○●
29. Hydrolysis of an ester with dilute acid gives a carboxylic acid and a/an:	ether	aldehyde	ketone	alcohol	○○○●
30. Basic hydrolysis of an ester forms a carboxylate salt and an:	alcohol	ether	aldehyde	alkene	●○○○
31. The basic hydrolysis of ethyl ethanoate with NaOH gives:	ethanoic acid and ethanol	sodium ethanoate and ethanol	ethanoic acid and ethane	sodium ethoxide and ethanal	○●○○

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Questions	A	B	C	D	A B C D
32. The –OH group in alcohols is ___ polar than that in water.	less	not	more	equally	●○○○
33. The polarity of the –OH bond in alcohols is decreased by the:	presence of a double bond	electron-releasing nature of the alkyl group	electron-withdrawing nature of the alkyl group	presence of halogens	○●○○
34. Alcohols are weaker acids than water because of the:	electron-releasing nature of alkyl groups	electron-withdrawing nature of alkyl groups	large size of oxygen	presence of hydrogen bonds	●○○○
35. Alcohols react with sodium metal to give:	alkane and sodium	sodium oxide and water	sodium alkoxide and hydrogen	sodium hydroxide and oxygen	○○●○
36. Ethanol reacts with sodium to form:	sodium oxide and ethane	sodium ethanoate	sodium hydroxide and ethene	sodium ethoxide and hydrogen gas	○○○●
37. The reaction of alcohols with sodium shows their:	basic nature	acidic nature	neutral nature	oxidising nature	○●○○
38. Alcohols burn completely in air to form:	carbon dioxide and water	methane and oxygen	carbon and hydrogen	carbon monoxide and water	●○○○
39. Methanol and ethanol are used as:	high-octane fuels	metals	plastics	fertilisers	●○○○
40. Alcohols react with thionyl chloride ($SOCl_2$) to give:	ethers	aldehydes	alkenes	alkyl chlorides	○○○●
41. The by-products of the reaction of an alcohol with $SOCl_2$ are SO_2 and:	H_2	HCl	H_2O	Cl_2	○●○○
42. The solvent used with $SOCl_2$ in the preparation of alkyl chlorides from alcohols is:	ethanol	hexane	water	pyridine	○○○●
43. Alcohols react with PCl_3 to give:	ketones	alkyl chlorides	ethers	alkenes	○●○○
44. Alcohols react with PCl_5 to give alkyl chloride, $POCl_3$ and:	H_2	HCl	Cl_2	H_2O	○●○○
45. The Lucas reagent is a mixture of:	dilute HCl and NaOH	$K_2Cr_2O_7$ and H_2SO_4	$KMnO_4$ and H_2SO_4	anhydrous $ZnCl_2$ and concentrated HCl	○○○●
46. The Lucas test is used to distinguish between:	alkanes and alkenes	primary, secondary and tertiary alcohols	acids and bases	aldehydes and ketones	○●○○
47. With the Lucas reagent, tertiary alcohols form an oily layer:	never	in 5 to 10 minutes	only on heating	immediately	○○○●
48. With the Lucas reagent, secondary alcohols form an oily layer:	immediately	only on heating	within 5 to 10 minutes	never	○○●○

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Questions	A	B	C	D	A B C D
49. With the Lucas reagent, primary alcohols form an oily layer:	on heating	never	in 5 to 10 minutes	immediately	●○○○
50. Which alcohol reacts fastest with the Lucas reagent at room temperature?	Propan-2-ol	Propan-1-ol	2-Methylpropan-2-ol	Ethanol	○○●○
51. The oily layer in the Lucas test is due to the formation of:	ether	alkene	halogenoalkane	aldehyde	○○●○
52. Alcohols can be converted to alkyl bromides by heating with:	NaOH	dilute HBr only	KBr and concentrated H_2SO_4	KCl	○○●○
53. Dehydration of alcohols gives:	alkanes	alkynes	alkenes	ketones	○○●○
54. Concentrated sulphuric acid and Al_2O_3 are used as:	reducing agents	oxidising agents	neutralising agents	dehydrating agents	○○○●
55. Dehydration of ethanol with excess concentrated H_2SO_4 at 170 °C gives:	ethanal	ethane	ethene	diethyl ether	○○●○
56. Dehydration of excess ethanol with concentrated H_2SO_4 at 140 °C gives:	ethanal	diethyl ether	ethane	ethene	○●○○
57. Diethyl ether has the formula:	CH_3OCH_3	$C_2H_5OC_2H_5$	CH_3COCH_3	C_2H_5OH	○●○○
58. Primary alcohols on oxidation first form:	aldehydes	alkenes	ethers	ketones	●○○○
59. Primary alcohols on further oxidation form:	carboxylic acids	ethers	ketones	alkenes	●○○○
60. Secondary alcohols on oxidation form:	aldehydes	alkenes	carboxylic acids	ketones	○○○●
61. Tertiary alcohols:	are oxidised to acids	are oxidised to ketones	are not oxidised by acidified $KMnO_4$	are oxidised to aldehydes	○○●○
62. Common oxidising agents for alcohols are acidified $K_2Cr_2O_7$ or acidified:	$KMnO_4$	$NaBH_4$	$LiAlH_4$	HCl	●○○○
63. To obtain an aldehyde from a primary alcohol, the product should be:	refluxed with excess oxidant	heated in a sealed tube	distilled off as it forms	treated with a base	○○●○
64. To obtain a carboxylic acid from a primary alcohol, the reaction mixture is:	neutralised	refluxed with excess oxidising agent	cooled	distilled immediately	○●○○
65. The colour change when acidified $K_2Cr_2O_7$ oxidises an alcohol is:	colourless to purple	yellow to red	green to orange	orange to green	○○○●

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Questions	A	B	C	D	A B C D
66. The colour change when acidified $KMnO_4$ oxidises an alcohol is:	green to blue	purple to colourless	colourless to purple	orange to green	○●○○
67. Ethanol can be converted into ethanoic acid by:	dilute HCl	$NaBH_4$	$LiAlH_4$	acidified $K_2Cr_2O_7$ with reflux	○○○●
68. Oxidation of propan-2-ol gives:	propanoic acid	propanal	propene	propanone	○○○●
69. Oxidation of propan-1-ol with distillation gives:	propene	propanone	propanal	propanoic acid	○○●○
70. Oxidation of propan-1-ol with reflux gives:	propanoic acid	propanone	propanal	propene	●○○○
71. Oxidation of methanol finally gives:	methanoic acid	ethanol	methane	methanal only	●○○○
72. The oxidation of 2-methylpropan-2-ol with acidified $K_2Cr_2O_7$ gives:	a carboxylic acid	no oxidation (it dehydrates to an alkene)	an aldehyde	a ketone	○●○○
73. Alcohols react with carboxylic acids in the presence of concentrated H_2SO_4 to form:	alkenes	aldehydes	ethers	esters	○○○●
74. The reaction of an alcohol with a carboxylic acid to form an ester is called:	hydrolysis	dehydration	esterification	hydration	○○●○
75. Esterification is a:	nuclear reaction	reversible reaction	irreversible reaction	fast ionic reaction	○●○○
76. Ethanol and ethanoic acid react to form:	ethyl methanoate and water	ethanal and water	ethyl ethanoate and water	methyl ethanoate and water	○○●○
77. The role of concentrated H_2SO_4 in esterification is as a:	catalyst and dehydrating agent	oxidising agent	base	reducing agent	●○○○
78. Esters usually have:	pleasant fruity smells	pungent smells like ammonia	foul smells	no smell	●○○○
79. The iodoform test is given by compounds containing the group:	–COOH	$-NH_2$	$CH_3CH_2CH_2-$	$CH_3CH(OH)-$	○○○●
80. The reagents used in the iodoform test are:	bromine and NaOH	iodine and HCl	chlorine and HCl	iodine and sodium hydroxide	○○○●
81. The iodoform reaction gives a pale yellow precipitate of:	tri-iodomethane (CHI_3)	iodoethane	methyl iodide	sodium iodide	●○○○
82. The iodoform test is given by ethanol, ethanal and:	methyl ketones	all ketones	tertiary alcohols	all primary alcohols	●○○○

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Questions	A	B	C	D	A B C D
83. Among primary alcohols, the only one that gives a positive iodoform test is:	propan-1-ol	methanol	ethanol	butan-1-ol	○○●○
84. Which of the following gives a positive iodoform test?	Propan-1-ol	Butan-1-ol	2-Methylpropan-2-ol	Propan-2-ol	○○○●
85. Which of the following does NOT give a positive iodoform test?	Butan-2-ol	Propan-2-ol	Propan-1-ol	Ethanol	○○●○
86. Tertiary alcohols do not give the iodoform test because they:	are oxidised	are acidic	have too many carbons	lack the $CH_3CH(OH)$– group	○○○●
87. In the iodoform reaction of ethanol, the other product along with CHI_3 is:	sodium ethoxide	methanol	sodium methanoate (HCOONa)	sodium ethanoate	○○●○
88. The iodoform reaction of a secondary alcohol $RCH(OH)CH_3$ gives CHI_3 and:	RCOONa	ROH	RCHO	RCH_3	●○○○
89. The formula of tri-iodomethane is:	CHI_3	CI_4	CH_2I_2	CH_3I	●○○○
90. An organic compound X reacts with Na to give hydrogen and is oxidised by acidified $K_2Cr_2O_7$ to a ketone. X is a:	secondary alcohol	carboxylic acid	tertiary alcohol	primary alcohol	●○○○
91. An organic compound Y gives an oily layer immediately with Lucas reagent. Y is a:	primary alcohol	tertiary alcohol	secondary alcohol	phenol	○●○○
92. An organic compound Z with C_2H_6O reacts with sodium to evolve hydrogen. Z is:	dimethyl ether	ethanal	ethene	ethanol	○○○●
93. A compound A (C_3H_8O) on oxidation forms B, which on further oxidation forms C. A is:	propan-2-ol	propan-1-ol	methoxyethane	propanone	○●○○
94. A compound A (C_3H_8O) on oxidation forms a ketone only. A is:	methoxyethane	propan-2-ol	propan-1-ol	propanal	○●○○
95. A student warms ethanol with acidified potassium dichromate(VI) and the colour changes from orange to green. This shows that ethanol is:	dehydrated	oxidised	neutralised	reduced	○●○○
96. A student adds sodium to dry ethanol and bubbles of gas appear. The gas is:	carbon dioxide	ethene	hydrogen	oxygen	○○●○
97. A student adds acidified $KMnO_4$ to tertiary butyl alcohol, and the purple colour persists. This shows that tertiary alcohols are:	easily oxidised	not oxidised	neutral	reduced	○●○○
98. A student heats ethanol with concentrated H_2SO_4 at 170 °C and passes the gas through bromine water, which is decolourised. The gas is:	ethene	ethyne	methane	ethane	●○○○
99. Why do alcohols have higher boiling points than alkanes of similar mass?	They form hydrogen bonds	They have double bonds	They are non-polar	They are ionic	●○○○

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Questions	A	B	C	D	A B C D
100. Lower alcohols are soluble in water because they:	are non-polar	are ionic	are acidic	form hydrogen bonds with water	○○○●
101. Methanol, ethanol and propanol are miscible with water in:	all proportions	only small amounts	no proportion	only 1:1 ratio	●○○○
102. As the size of the alkyl group increases, the solubility of alcohols in water:	remains constant	becomes infinite	increases	decreases	○○○●
103. The boiling points of alcohols ___ with an increase in molecular mass.	decrease	remain constant	increase	vanish	○○●○
104. Which alcohol has the highest boiling point?	Butan-1-ol	Propan-1-ol	Ethanol	Methanol	●○○○
105. Between 1-propanol and 2-propanol, the one with the higher boiling point is:	1-propanol	both equal	2-propanol	neither	●○○○
106. The hydroxyl group of alcohols is attached to a/an:	sp^2 hybridised carbon in a ring	sp hybridised carbon	sp^3 hybridised carbon	nitrogen atom	○○●○
107. Which of the following is the most acidic?	Propan-2-ol	Ethanol	Methanol	Water	○○○●
108. The acidity order of alcohols is:	secondary > primary > tertiary	tertiary > primary > secondary	tertiary > secondary > primary	primary > secondary > tertiary	○○○●
109. Methanol is commonly known as:	rubbing alcohol only	wood spirit	milk alcohol	grain alcohol	○●○○
110. Ethanol is commonly known as:	glycerine	grain alcohol	glycol	wood spirit	○●○○
111. Methanol is poisonous because it can cause:	blindness	improved vision	stronger bones	better hearing	●○○○
112. Ethanol is used in hand sanitisers because it:	colours the hands	kills germs	dissolves the skin	cools the skin only	○●○○
113. Ethanol is used in perfumes because it is a good:	solvent	oxidising agent	precipitant	catalyst	●○○○
114. Glycerol is used in:	explosives only	plastics only	cosmetics and soaps	fertilisers	○○●○
115. Ethylene glycol is used as:	food	fertiliser	perfume	antifreeze	○○○●
116. Fermentation of sugar produces:	ethanol	glycerol	propanol	methanol	●○○○

Questions	A	B	C	D	A B C D
117. Methanol can be prepared from carbon monoxide and hydrogen using:	an alkali	a catalyst at high pressure	dilute acid	sunlight	○●○○
118. A hydroxy compound reacts with $HCl/ZnCl_2$ slowly only on heating. It is a:	secondary alcohol	ether	primary alcohol	tertiary alcohol	○○●○
119. The reaction $2CH_3CH_2OH + 2Na \rightarrow 2CH_3CH_2ONa + H_2$ shows that ethanol is a:	strong base	strong acid	neutral compound	very weak acid	○○○●
120. Ethanol is not acidic enough to react with:	potassium metal	sodium hydride	sodium hydroxide	sodium metal	○○●○
121. Primary alcohol → aldehyde → carboxylic acid is an example of:	hydration	dehydration	reduction	oxidation	○○○●
122. Aldehyde → primary alcohol is an example of:	dehydration	hydration	reduction	oxidation	○○●○
123. Ketone → secondary alcohol is an example of:	esterification	oxidation	dehydration	reduction	○○○●
124. Alkene → alcohol using steam and H_3PO_4 is an example of:	reduction	dehydration	oxidation	hydration	○○○●
125. Alcohol → alkene using conc. H_2SO_4 is an example of:	dehydration	hydration	reduction	oxidation	●○○○
126. Alcohol + carboxylic acid → ester is an example of:	addition	condensation	hydrolysis	reduction	○●○○
127. Ester + water → alcohol + acid is an example of:	addition	reduction	condensation	hydrolysis	○○○●
128. The number of structural isomers of C_4H_9OH is:	2	4	3	5	○●○○
129. The molecular formula of the simplest alcohol is:	C_2H_5OH	CH_4O_2	CH_2O	CH_3OH	○○○●
130. Which of the following can be used to convert an alcohol into an ester?	A carboxylic acid with concentrated H_2SO_4	Bromine water	Aqueous NaOH	Dilute HCl	●○○○
131. The general formula of saturated monohydric alcohols is:	$C_nH_{2n-1}OH$	$C_nH_{2n+1}OH$	$C_nH_{2n}OH$	$C_nH_{2n+2}O_2$	○●○○
132. The functional group isomer of ethanol is:	ethene	ethanoic acid	ethanal	methoxymethane	○○○●
133. The functional group isomer of propan-1-ol is:	propanone	propanal	methoxyethane	propene	○○●○

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Questions	A	B	C	D	A B C D
134. Ethanol can be converted into chloroethane by:	$KMnO_4$	$SOCl_2$	NaOH	$LiAlH_4$	○●○○
135. Ethanol can be prepared from ethene by:	halogenation	hydrogenation	polymerisation	hydration with steam and H_3PO_4	○○○●
136. Ethanol can be prepared from bromoethane by:	heating with aqueous NaOH	reaction with Br_2	reaction with H_2	heating with ethanolic NaOH	●○○○
137. Ethanol can be prepared from ethanal by:	dehydration	hydration	oxidation with $KMnO_4$	reduction with $NaBH_4$	○○○●
138. The oxidation product of ethanol with distillation is:	ethanoic acid	ethene	ethane	ethanal	○○○●
139. The oxidation product of ethanol with excess oxidant under reflux is:	ethane	ethanoic acid	ethene	ethanal	○●○○
140. In the mechanism of the reaction of tertiary alcohols with HCl, the intermediate formed is a:	carbanion	primary carbocation	free radical	tertiary carbocation	○○○●
141. Tertiary alcohols react fastest with Lucas reagent because they form:	free radicals	the least stable carbocation	carbanions	the most stable carbocation	○○○●
142. An alcohol that gives a positive iodoform test and is secondary is:	butan-2-ol	pentan-3-ol	butan-1-ol	2-methylpropan-1-ol	●○○○
143. An alcohol that gives a negative iodoform test is:	ethanol	butan-2-ol	butan-1-ol	propan-2-ol	○○●○
144. Ethanol with sodium produces hydrogen. The compound formed is called:	sodium carbonate	sodium hydroxide	sodium ethoxide	sodium ethanoate	○○●○
145. A student adds acidified $K_2Cr_2O_7$ to propan-2-ol and the solution turns green. The product is:	propanoic acid	propanone	propene	propanal	○●○○
146. A student adds acidified $K_2Cr_2O_7$ to 2-methylpropan-2-ol and the solution stays orange. This shows the alcohol is:	tertiary	secondary	primary	an ether	●○○○
147. The colour of the oxidising agent acidified $K_2Cr_2O_7$ before reaction is:	green	purple	orange	colourless	○○●○
148. The green colour after oxidation by dichromate is due to:	Mn^{2+} ions	$Cr_2O_7^{2-}$ ions	Cr^{3+} ions	MnO_4^- ions	○○●○
149. Alcohols and ethers with the same formula are examples of:	geometric isomers	chain isomers	positional isomers	functional group isomers	○○○●
150. Butan-1-ol and butan-2-ol are examples of:	positional isomers	functional isomers	chain isomers	optical isomers	●○○○

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