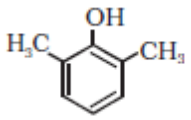
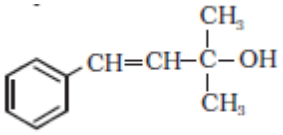
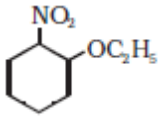
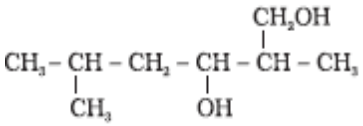
INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF CHEMISTRY
CLASS XII
CHAPTER – ALCOHOLS, PHENOLS AND ETHERS
WORKSHEET - 5

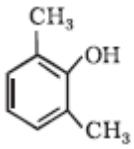
1. Name the following compounds according to the IUPAC system:

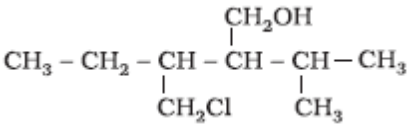
i) 

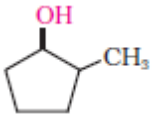
ii) 

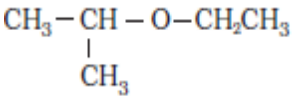
iii) 

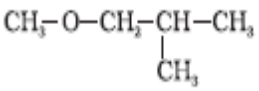
iv) 

v) 

vi) 

vii) 

viii) 

ix) 

x) $C_2H_5OCH_2CH_2CH_2OH$

2 Account for the following:

i) C – O – H bond angle in alcohol is less than tetrahedral angle.

ii) C – O bond length in phenol is shorter than that in methanol.

iii) C – O – C bond angle in ether is greater than the tetrahedral angle.

iv) The boiling points of alcohols and phenols are higher than corresponding alkanes of same molecular mass.

v) Among the isomeric alcohols the boiling point follows the order $3^0 < 2^0 < 1^0$.

vi) Lower alcohols are soluble in water

vii) Ethanol is less acidic than methanol.

viii) The acidic character of the alcohols follows the order $1^0 > 2^0 > 3^0$

ix) The reaction of alcohol with acid is carried out in presence of small amount of concentrated H_2SO_4.

x) Reaction of alcohol with acid chloride is carried out in presence of a base pyridine.

3. Effect the following conversions:

i)	Chloro benzene to phenol	vi)	Propene to 1-Propanol
ii)	Benzene sulphonic acid to phenol	vii)	Propene to 2-propanol
iii)	Ethanol to isopropyl alcohol	viii)	Phenol to anisole
iv)	Phenol to picric acid	ix)	Phenol to aspirin
v)	Phenol to p-hydroxy acetophenone	x)	Aniline to phenol

4. Arrange the following on the increasing property given in bracket:

a) Pentan-1-ol, butan-1-ol, butan-2-ol, ethanol, propan-1-ol, methanol (Boiling Point)

b) Pentan-1-ol, n-butane, pentanal, Ethoxyethane (Boiling point)

c) Propan-1-ol, 2, 4, 6 – trinitro phenol, 3,5 – dinitro phenol, 4-methylphenol (Acidity)

d) Ter. Butyl alcohol, isobutyl alcohol, n-butyl alcohol (Acidity)

e) 4-nitro phenol, phenol, 2,4,6-trinitro phenol (Acid strength)

5. Write short note on the following:

i) Hydroboration

ii) Reimer – Tiemann Reaction.

iii) Friedel-Craft's reaction

iv) Kolbe's reaction

v) Williamson's synthesis

6. Write the mechanism of the following:
Acid catalyzed dehydration of ethanol to diethyl ether.

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