Haloalkanes and Haloarenes

Worksheet 2

1.Give reasons for the following:

a) Thionyl chloride method is preferred for preparing alkyl chloride from alcohols

b) p-dichlorobenzene has higher melting point than that of ortho or meta isomer.

c) The presence of ─NO2 group at ortho or para position increases the reactivity of haloarenes towards nucleophilic

substitution reactions.

d) Alkyl halides, though polar, are immiscible with water.

e) Grignard reagent should be prepared under anhydrous conditions.

f) Chlorobenzene is extremely less reactive towards a nucleophilic substitution reaction.

g) The C─Cl bond length in chlorobenzene is shorter than that in CH3─Cl.

h) Chloroform is stored in closed dark brown bottles.

i) t-butyl bromide more reactive towards SN1 reaction as compared to n-butyl bromide.

j) SN1 reactions are accompanied by racemisation in optically active alkyl halides.

k) The dipole moment of chlorobenzene is lower than that of cyclohexyl chloride.

l) n-butyl bromide has higher boiling point than t-butyl bromide.

m) Racemic mixture is optically inactive.

n) Butan-1-ol optically inactive but butan-2-ol is optically active.

o) Ethyl iodide undergoes SN2 reaction faster than ethyl bromide.

p) (±) 2-butanol is optically inactive.

q) Haloalkanes easily dissolve in organic solvents.

r) Haloalkanes react with KCN to form alkyl cyanides as main product while AgCN form isocyanides as the chief product.