HALOALKANES AND HALOARENES: REVISION

1. Write structures of the following compounds:

(i) 2-Chloro-3-methylpentane

(ii) 1-Chloro-4-ethylcyclohexane

(iii) 4-tert. Butyl-3-iodoheptane

(iv) 1,4-Dibromobut-2-ene

(v) 1-Bromo-4-sec. butyl-2-methylbenzene

2. Why is sulphuric acid not used during the reaction of alcohols with KI?

3. Write structures of different dihalogen derivatives of propane.

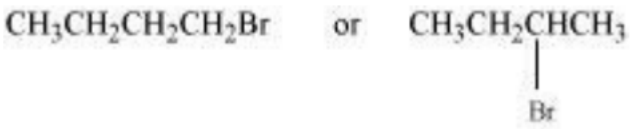
4. Among the isomeric alkanes of molecular formula C5H12, identify the one that on photochemical chlorination yields (i) A single monochloride. (ii) Three isomeric monochlorides. (iii) Four isomeric monochlorides.

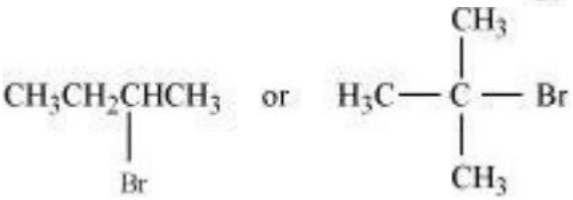
5.Arrange each set of compounds in order of increasing boiling points.

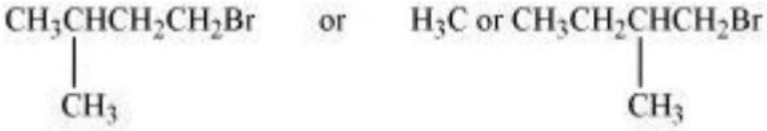
(i) Bromomethane, Bromoform, Chloromethane, Dibromomethane.

(ii) 1-Chloropropane, Isopropyl chloride, 1-Chlorobutane

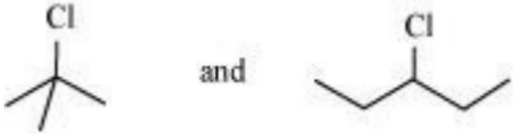
6. Which alkyl halide from the following pairs would you expect to react more rapidly by an SN2 mechanism? Explain your answer.

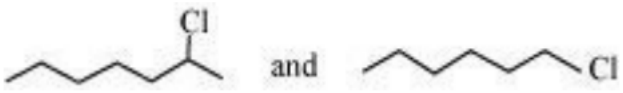
i 

ii 

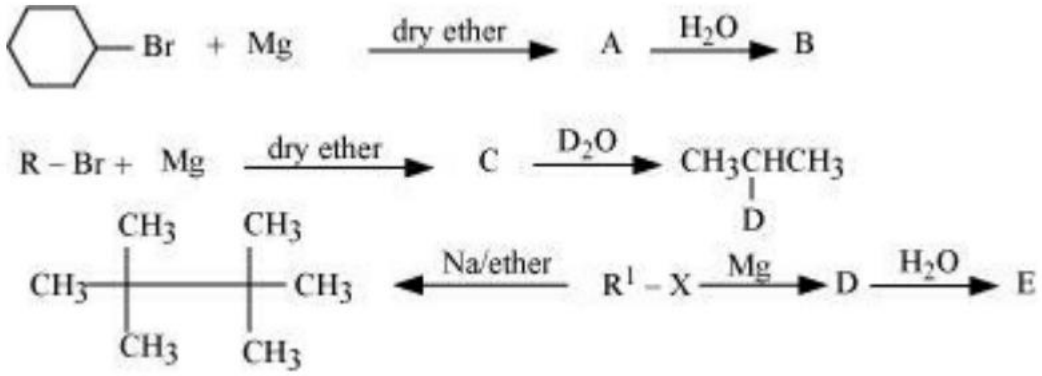
iii 

7. In the following pairs of halogen compounds, which compound undergoes faster SN1 reaction?

i 

ii 

8. Identify A, B, C, D, E, R and R^1 in the following:



9. . Name the following halides according to IUPAC system and classify them as alkyl, allyl, benzyl (primary, secondary, tertiary), vinyl or aryl halides:

(i) (CH3)2CHCH(Cl)CH3

(ii) CH3CH2CH(CH3)CH(C2H5)Cl

(iii) CH3CH2C(CH3)2CH2 I

(iv) (CH3)3CCH2CH(Br)C6H5

(v) CH3CH(CH3)CH(Br)CH3

(vi) CH3C(C2H5)2CH2Br

(vii) CH3C(Cl)(C2H5)CH2CH3

(viii) CH3CH=C(Cl)CH2CH(CH3)2

(ix) CH3CH=CHC(Br)(CH3)2

(x) p-ClC6H4CH2CH(CH3)2

(xi) m-ClCH2C6H4CH2C(CH3)3

(xii) o-Br-C6H4CH(CH3)CH2CH3

10. How will you bring about the following conversions?

(i) Ethanol to but-1-yne

(ii) Ethane to bromoethane

(iii) Propene to 1-nitropropane

(iv) Toluene to benzyl alcohol

(v) Propene to propyne

(vi) Ethanol to ethyl fluoride

(vii) Bromomethane to propanone

(viii) But-1-ene to but-2-ene

(ix) 1-Chlorobutane to n-octane (x) Benzene to biphenyl