



MEGA LECTURE

Topic 8 EXERCISE 3 – reactions of haloalkanes

1.
 - a) Draw the structure of a chlorofluorocarbon and write an equation to show how it can release chlorine radicals in the presence of ultra-violet light.
 - b) Write equations to show how chlorine radicals can catalyse the destruction of ozone.
2.
 - a) Explain why haloalkanes can react with nucleophiles.
 - b) Write an equation and give the mechanism for the following reactions:
 - i) bromoethane with aqueous sodium hydroxide
 - ii) 2-chloropropane with potassium cyanide
 - iii) 1-iodobutane with ammonia
3. State two types of reaction that could take place when 1-chlorobutane reacts with potassium hydroxide. Give the mechanism for each reaction and state the role of the hydroxide ion in each case. Suggest conditions which would favour each type of reaction.
4. Suggest, giving reasons, which of chloroethane, bromoethane and iodoethane will react fastest with sodium hydroxide.
5. State the possible products that could be formed when the following haloalkanes undergo elimination. If more than one product is formed, identify them both and explain how each is formed.
 - a) 1-bromobutane
 - b) 2-bromobutane
 - c) 1-bromomethylpropane
 - d) 2-bromomethylpropane