



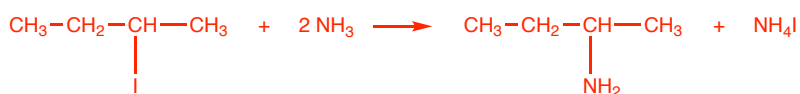
- 1 a What is a nucleophile? **lone pair donor**
- b Why are halogenoalkanes attacked by nucleophiles?
carbon-halogen bond is polar
that C atom is $\delta+$ and so attacked by nucleophiles
- c Explain why 1-iodopropane react faster with nucleophiles than 1-chloropropane, assuming the same reaction conditions.
C-I bond is longer and therefore weaker than C-Cl bond

2 Write balanced equations for the following reactions of halogenoalkanes. [You **must always** draw the structural formulae of organic compounds in equations.]

a bromoethane with hot, ethanolic potassium cyanide



b 2-iodobutane with hot, concentrated ammonia solution

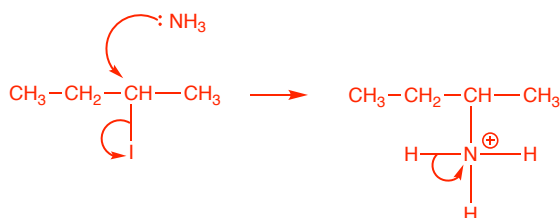


c 1-chloropropane with warm, aqueous sodium hydroxide



3 Draw the mechanism for reactions 2b and 2c.

2-iodobutane with hot, concentrated ammonia solution



1-chloropropane with warm, aqueous sodium hydroxide

