

Test yourself

Chapter 15

1 What is the name of the following halogenoalkane?



- A 4-bromopentane
 - B 2-bromobutane
 - C 2-bromopentane
 - D 1,1-bromomethylbutane
- 2 We can describe $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHBrCH}_3$ as a ...
- A primary halogenoalkane
 - B secondary halogenoalkane
 - C tertiary halogenoalkane
 - D carbocation
- 3 Halogenoalkane X is heated under reflux with aqueous sodium hydroxide solution. The organic product is ethanol. Which one of the following could be the structural formula of X?
- A $\text{CH}_3\text{CH}_2\text{Cl}$
 - B $\text{ClCH}_2\text{CH}_2\text{Cl}$
 - C $\text{CH}_2=\text{CHCl}$
 - D CH_3Cl

- 4 Which one of the following would undergo hydrolysis at the fastest rate?
- A $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Br}$
 - B $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$
 - C $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{F}$
 - D $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{I}$
- 5 What name is given to the reaction in which a halogenoalkane is hydrolysed?
- A Electrophilic addition
 - B Electrophilic elimination
 - C Nucleophilic addition
 - D Nucleophilic substitution
- 6 Which one of the following statements about the mechanism of hydrolysis of bromoethane and 1-bromopropane is correct?
- A Both bromoethane and 1-bromopropane are hydrolysed by an $\text{S}_{\text{N}}1$ mechanism
 - B Both bromoethane and 1-bromopropane are hydrolysed by an $\text{S}_{\text{N}}2$ mechanism
 - C Bromoethane is hydrolysed by an $\text{S}_{\text{N}}2$ mechanism and 1-bromopropane is hydrolysed by an $\text{S}_{\text{N}}1$ mechanism
 - D Bromoethane is hydrolysed by an $\text{S}_{\text{N}}1$ mechanism and 1-bromopropane is hydrolysed by an $\text{S}_{\text{N}}2$ mechanism

- 7 1-bromopropane is heated under reflux with ethanolic potassium cyanide. What is the name of the organic product of the reaction?
- A Propylamine
 - B Propanenitrile
 - C Butanenitrile
 - D Butylamine
- 8 What reagents are needed to convert bromoethane to ethene?
- A Potassium dichromate(VI) and dilute sulfuric acid
 - B Potassium manganate(VII) with dilute sulfuric acid
 - C Ethanolic solution of sodium hydroxide
 - D Concentrated ammonia solution
- 9 Which one of the following is **not** a use that has been made of CFCs (chlorofluorocarbons)?
- A Whitener in washing powder
 - B Refrigerants
 - C Solvents
 - D Blowing agents in the manufacture of foam plastics
- 10 CFCs were used as propellants in aerosol cans. Why is their use now banned?
- A They caused explosions in the presence of a naked flame
 - B They cause acid rain
 - C They cause depletion of the ozone layer
 - D They were found to be toxic to humans