

- 31** 1,4-dibromobutane reacts with an excess of ethanolic sodium hydroxide until no further reaction takes place.

What is the relative formula mass of the major organic product?

- A** 54 **B** 56 **C** 74 **D** 90

- 30** Which reaction mixture produces a nitrile?

- A** halogenoalkane with KCN in ethanol
B halogenoalkane with NH_3 in ethanol
C ketone with 2,4-DNPH
D carboxylic acid with NH_3 in water

- 27** Structural and stereoisomerism should be considered when answering this question.

A mixture of 1-chlorobutane and 2-chlorobutane is heated with an excess of NaOH in ethanol.

How many different organic molecules will be produced?

- A** 1 **B** 2 **C** 3 **D** 4

- 38** When bromoethane, $\text{C}_2\text{H}_5\text{Br}$, is heated with NaOH in ethanol, which type of reaction occurs?

- A** electrophilic substitution
B elimination
C nucleophilic substitution, mainly via an $\text{S}_{\text{N}}1$ mechanism
D nucleophilic substitution, mainly via an $\text{S}_{\text{N}}2$ mechanism