



ORGANIC REACTIONS

Check List

Make sure you

- Can identify different types of chemical reactions involving organic molecules

Exam Questions

Question 1

(Adapted from DBE Nov 2013 Paper 2 Question 5)

Two straight chain compounds, P and Q, each have the following molecular formula:

P: C_4H_{10}

Q: C_4H_8

1.1 Write down the name of the homologous series to which Q belongs. (1)

1.2 Compound P reacts with chlorine to form 2-chlorobutane.

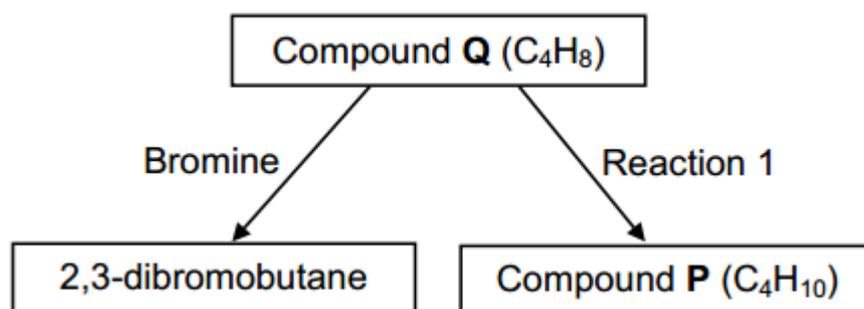
Write down:

1.2.1 A balanced chemical equation, using MOLECULAR FORMULAE, for the reaction that takes place (3)

1.2.2 The type of reaction that takes place (1)

1.2.3 One reaction condition (other than the solvent needed) (1)

1.3 Compound Q takes part in reactions as shown in the flow diagram below.



Write down the:

1.3.1 Structural formula for 2,3-dibromobutane (2)

1.3.2 IUPAC name of compound Q (2)

1.3.3 Balanced equation, using structural formulae, for reaction 1 (4)

1.3.4 Type of reaction that occurs in reaction 1 (1)

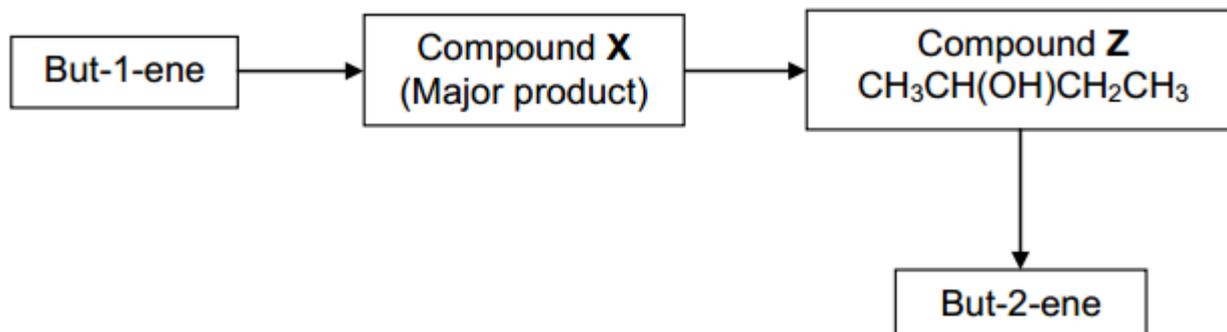




Question 2

(Adapted from DBE Feb 2014 Paper 2 Question 5)

The flow diagram below shows the steps that a learner follows to convert but-1-ene to but-2-ene.



- 2.1 Write down the structural formula of the functional group of but-1-ene. (1)
- 2.2 Compound X is formed when but-1-ene reacts with HCl(g) . (1)
- 2.2.1 Name the type of reaction that takes place. (1)
- 2.2.2 Write down the structural formula of compound X. (2)
- 2.3 Compound X is converted to alcohol Z. (1)
- 2.3.1 Name the type of reaction that takes place. (1)
- 2.3.2 Write down the NAME or FORMULA of another reactant needed for this reaction. (1)
- 2.4 Compound Z is converted to but-2-ene in the presence of concentrated sulphuric acid. (1)
- 2.4.1 Is compound Z a PRIMARY, SECONDARY or TERTIARY alcohol? (1)
- 2.4.2 Name the type of reaction that takes place. (1)
- 2.4.3 What is the role of sulphuric acid in this reaction? (1)
- 2.5 Another learner discovers that but-2-ene can be prepared using the following incomplete reaction below.
- Compound X + (a) \rightarrow but-2-ene + (b) + (c)
- Write down the:
- 2.5.1 Type of reaction that takes place (1)
- 2.5.2 Conditions needed for this reaction to take place (2)
- 2.5.3 FORMULAE of the reactant and products represented by each of the letters (a), (b) and (c) respectively (3)

Question 3

Poly(lactic acid) (PLA) is an example of a polyester formed by condensation

- 3.1 Draw the structural formula of the monomer used to produce poly(lactic acid) (2)
- 3.2 Illustrate the reaction to produce poly(lactic acid) by showing how two monomers combine (3)

