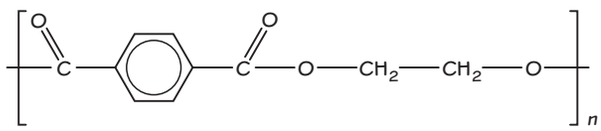
Exam skills 12

1 The formula of a polymer is given. This polymer was formed from two monomers.



(a) The empirical formula of the polymer is

☐ A $C_{10}H_8O_4$

☐ B $C_{10}H_{10}O_4$

☐ C $C_{10n}H_{8n}O_{4n}$

☐ D $C_5H_4O_2$. **(1 mark)**

(b) (i) What type of polymer is this?

..... **(1 mark)**

(ii) A small molecule that could not be formed when this polymerisation occurs is

What could react to form the functional group in the polymer?

☐ A ammonia

☐ B hydrogen chloride

☐ C water

☐ D poly(ethene). **(1 mark)**

(c) If this polymer is hydrolysed under alkaline conditions, using KOH, two products are formed.

(i) Draw the structural formula and name each product.

Molecule 1: Molecule 2:

Remember that the monomer formed by hydrolysis might react with alkali.

.... **(4 marks)**

(ii) State the difference in the products formed when the polymer is hydrolysed under acidic conditions.

..... **(1 mark)**