



Oxford Cambridge and RSA

GCE A level Chemistry A (H432)

H432/02 Synthesis and analytical techniques

MCQ Question Set 1

2.1 Atoms and reactions

Multiple Choice Questions

1. Complete combustion of an organic compound forms 40 cm^3 of carbon dioxide and 40 cm^3 of water vapour, under the same conditions of temperature and pressure. [1]

Which molecular formula could the organic compound have?

- A C_3H_8
- B $\text{C}_2\text{H}_2\text{O}$
- C $\text{C}_2\text{H}_4\text{O}$
- D $\text{C}_2\text{H}_3\text{N}$

Your answer

2. Which type of reaction has the greatest atom economy? [1]

- A Substitution
- B Hydrolysis
- C Elimination
- D Addition

Your answer

3. Ethanol can be prepared by different reactions.

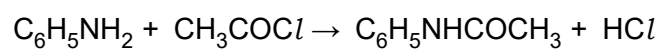
Which reaction has the lowest atom economy?

- A $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2\text{C}_2\text{H}_5\text{OH} + 2\text{CO}_2$
- B $\text{C}_2\text{H}_4 + \text{H}_2\text{O} \rightarrow \text{C}_2\text{H}_5\text{OH}$
- C $\text{C}_2\text{H}_5\text{Br} + \text{H}_2\text{O} \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{HBr}$
- D $\text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O} \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{CH}_3\text{COOH}$

Your answer

[1]

A student reacts 4.50 g of $C_6H_5NH_2$ with excess CH_3COCl in the reaction below.



$M_r = 93.0$

$M_r = 135.0$

The reaction produces 3.25 g of $C_6H_5NHCOCH_3$.

What is the percentage yield of $C_6H_5NHCOCH_3$?

A 49.8

B 68.9

C 72.2

D 95.4

Your answer

[1]

Total Marks for Question Set 1: 4

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