AQA - Reaction of alkenes and alcohol – GCSE Chemistry

1. May/2019/Paper_8462/2F/No.2.1-2.2

Which **three** properties of carbon monoxide make it necessary to use carbon monoxide detectors?

Choose answers from the box.

[3 marks]

acidic	**alkaline**	**colourless**	**corrosive**	**insoluble**	**odourless**	**toxic**

1 _____

2 _____

3 _____

Complete the sentence.

[1 mark]

Methane produces carbon monoxide when burning in a limited supply of

_____.

2. May/2019/Paper_8462/2F/No.2.4

Most methane is obtained from natural gas, which is a fossil fuel.

Methane can also be produced renewably.

Which **two** are renewable sources of methane?

[2 marks]

Tick (✓) **two** boxes.

Animal waste ☐

Food in landfill ☐

Nitrogen in the air ☐

Non-biodegradable plastics ☐

Scrap iron ☐

3. May/2019/Paper_8462/2F/No.4.5-4.6

Bromine water is an orange solution used to identify alkenes.

Draw **one** line from each gas to its effect on bromine water.

[2 marks]

Gas	Effect on bromine water
	Forms a blue solution
Methane	Forms a colourless solution
	Forms a green solution
Propene	Forms a white precipitate
	No effect

Propene reacts with water (steam) to make propanol.

The ratio of the masses of propene and water that react is:

propene : water

7 : 3

Calculate the mass of propene that reacts with 21 g water.

[2 marks]

Mass = _____ g

4. May/2019/Paper_8462/2H/No.5

This question is about combustion of fuels.

Some central heating boilers use wood as a fuel.

Suggest **two** reasons why wood is more sustainable than natural gas as a fuel for central heating boilers.

[2 marks]

1 _____

_____

2 _____

_____

Natural gas is mainly methane.

When methane burns it can produce both carbon monoxide and carbon dioxide.

Explain the process by which carbon monoxide can be produced when methane is burned.

[2 marks]

_____

_____

_____

_____

Balance the equation for the combustion of methane to produce carbon monoxide.

[1 mark]

____ $CH_4(g)$ + ____ $O_2(g)$ → ____ $CO(g)$ + ____ $H_2O(l)$

Propane burns to form carbon dioxide and water.

The equation for the reaction is:

$$C_3H_8(g) + 5\,O_2(g) \rightarrow 3\,CO_2(g) + 4\,H_2O(l)$$

3.60 dm^3 carbon dioxide is produced when a sample of propane is burned in 7.25 dm^3 oxygen.

Calculate the volume of unreacted oxygen.

Give your answer in cm^3

[4 marks]

Volume of unreacted oxygen = _____ cm^3

5. May/2019/Paper_8462/2H/No.8.3

The atmosphere of Titan contains small amounts of propene.

Describe a test to show that propene is an unsaturated hydrocarbon.

Give the result of the test.

[2 marks]

Test _____

_____

Result _____

_____