AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 5.10.1.1

Using the Earth's resources and sustainable development

Past-paper questions

Tier	**Higher**
Question groups	**1**
Available paper years	**2025–2025**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

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Question 01

June 2025 | 8464/C/2H | Original Q3

0 3 Crude oil is a finite resource found in rocks.

0 3 . 1 What is meant by a 'finite' resource?

[1 mark]

0 3 . 2 Most of the compounds in crude oil are hydrocarbons.

Define the term 'hydrocarbon'.

[1 mark]

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0 3 . 3 Crude oil found in different areas has different compositions.

Table 2 shows the percentage (%) composition of crude oil from one area.

Table 2

Fraction	Percentage (%) of fraction
Petrol	31.3
Kerosene	13.4
Diesel oil	14.4
Heavy fuel oil	40.9

The volume of crude oil is measured in a unit called 'barrels'.

1 barrel = 159 dm^3

Calculate the volume of **petrol** in dm^3 in 90 barrels of crude oil.

Give your answer to 3 significant figures.

[4 marks]

Volume of petrol (3 significant figures) = _____ dm^3

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Question 01 · continued

0 3 . 4 Fractions from crude oil can be processed to produce many useful materials by the petrochemical industry.

Which is a useful material produced by the petrochemical industry?

[1 mark]

Tick (✓) **one** box.

- Alloys ☐
- Ceramics ☐
- Fertilisers ☐
- Lubricants ☐

0 3 . 5 Catalytic cracking is used to crack hydrocarbons.

Name **one** other method of cracking hydrocarbons.

[1 mark]

_____

0 3 . 6 Alkanes are produced by cracking.

Hydrocarbon **Z** is a different type of hydrocarbon to alkanes.

Hydrocarbon **Z**:

- is also produced by cracking
- can be used to produce polymers.

Describe a test for hydrocarbon **Z**.

Give the result of the test.

[2 marks]

Test _____

_____

Result _____

_____

10