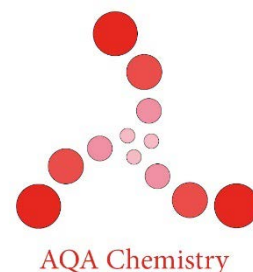


GCSE

COMBINED SCIENCE: TRILOGY

END OF TOPIC TEST



Time allowed: 1 hour

Materials

For this paper you must have:

- a ruler
- a calculator

Instructions

- Answer **all** questions in the spaces provided.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- There are 50 marks available on this paper.
- The marks for questions are shown beside each question.
- You are expected to use a calculator where appropriate.
- You are reminded of the need for good English and clear presentation in your answers.

Advice

- In all calculations, show clearly how you work out your answer.

Please write clearly, in block capitals:

Surname: _____

Forename(s): _____

Class: _____

Teacher: _____

Date: _____

Q1a Crude oil is a fossil fuel.

It is a mixture of different compounds. Most of these are hydrocarbons.

Which two elements are found in hydrocarbons?

_____ and _____ 2

Q1b Alkanes are a family of hydrocarbons.

What type of bond is found in alkanes?

Circle the correct answer.

Single ionic bonds

Single covalent bonds

Double ionic bonds

Double covalent bonds 1

Q1c Ethane is an alkane.

It has the formula C_2H_6

In the space below draw the structure of ethane.

2

Q1d Sort the following into pure substances and mixtures:

Air Diamond Sea water Oxygen Carbon dioxide

Pure substance	Mixture

3

Q1e Complete the molecular formula for alkanes below.



1

Q1f What name is given to the alkane with the molecular formula C_4H_{10} ?

1

Q3a Complete the following sentences.

Cracking involves heating a long chain _____ to make a vapour. The vapour is either passed over a hot _____ or mixed with steam and heated to a very temperature so that thermal decomposition reactions occur. 2

Q3b Cracking produces unsaturated hydrocarbons.

What name is given to these unsaturated hydrocarbons?
_____ 1

Q3c What is the difference between a saturated and unsaturated hydrocarbon?

_____ 2

Q3d Describe and explain how a hydrocarbon can be tested to see if it is unsaturated or saturated.

_____ 3

Q6 A student carried out an investigation to see how much energy was released by burning different fuels.

The student had four fuels – A, B, C and D.

They wanted to see how the temperature of water changed when they burnt the different fuels.

Q6a What is the student's independent variable?

1

Q6b What is the student's dependent variable?

1

Q6c Describe how the student could ensure that they have a fair test.

2

Q6d Describe how the student could get accurate results.

3

Q6e Describe how the student could use the results of other students in the class, who have investigated the same hypothesis, to see if their results are reproducible.

2