

Please write clearly, in block capitals.

Centre number

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Candidate number

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Surname

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Forename(s)

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Candidate signature

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# ELC SCIENCE 5960

## Externally-Set Assignment

### Component 4 - Chemistry: Chemistry in our world

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**Marks**

Date of Exam

Time allowed: 45 minutes

#### Materials

For this paper you must have:

- a ruler

#### Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the bottom of this page.
- 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

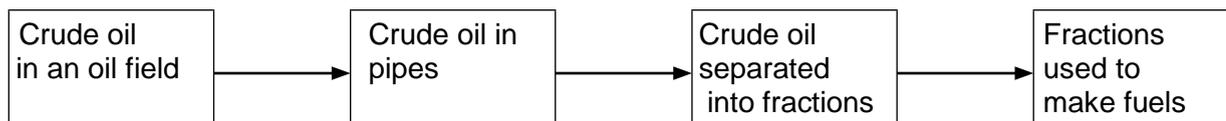
- There are 20 marks available on this paper.
- The marks for questions are shown in brackets.

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Answer **all** questions in the spaces provided.

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1. The flow chart below shows what happens to crude oil.



Which **two** statements about crude oil are true?

[2 marks]  
Outcome 7

Tick (✓) **two** boxes.

We can only find crude oil under the sea.

We know crude oil is a mixture of compounds.

We can make petrol from crude oil.

We cannot set crude oil alight.

2. Burning fuels produces gases.

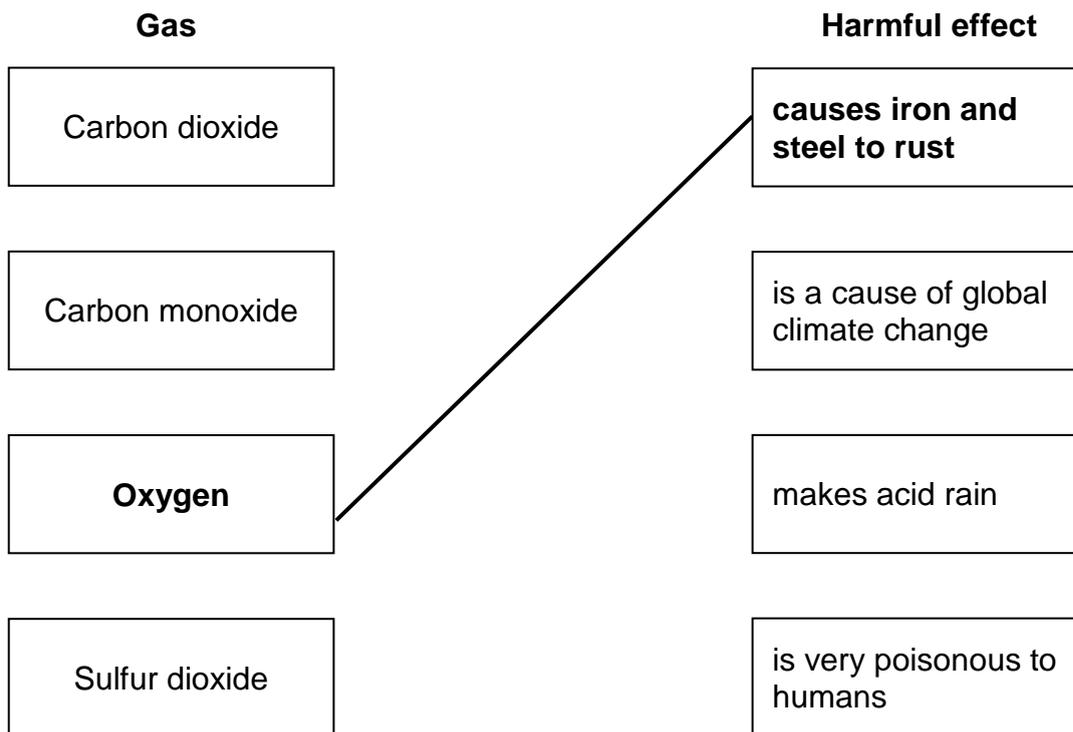
The column on the left shows some gases.

The column on the right shows some harmful effects of these gases.

[3 marks]  
Outcome 8

Draw **one** line from each gas to its harmful effect.

We have done one to help you.



Turn over for the next question

3. Methane is a greenhouse gas.

Which activity increases the amount of methane in the atmosphere?

[1 mark]  
Outcome 9

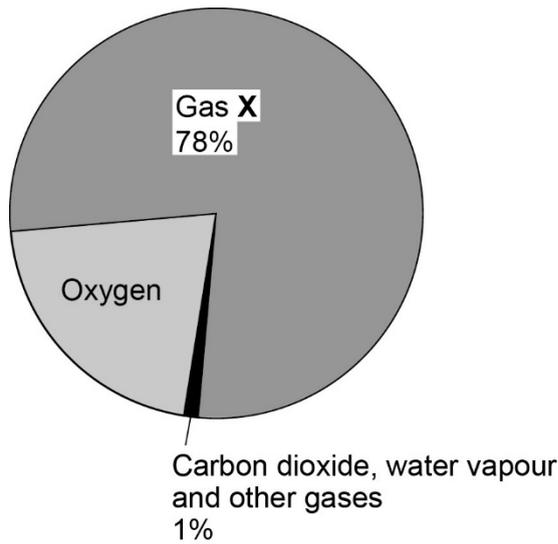
Tick (✓) **one** box.

Burning diesel fuel in cars and lorries

Growing wheat in large fields

Decomposing rubbish in landfill sites

4. The diagram shows the gases in air.



(a) What is the name of Gas X?

[1 mark]  
Outcome 6

.....

(b) What is the percentage of oxygen in the air?

[1 mark]  
Outcome 6

.....%

5. The Earth's atmosphere billions of years ago was mainly carbon dioxide and water vapour.

(a) When the Earth cooled the water vapour formed the oceans.

Name the process that happens when water vapour cools to become liquid.

[1 mark]  
Outcome 5

.....

(b) Which life forms developed to produce oxygen by photosynthesis?

[1 mark]  
Outcome 5

Tick (✓) **one** box.

Algae and fungi

Algae and plants

Animals and fungi

6. Some fresh water was collected from a stream. The water was cloudy.

What **two** processes are used to make the water safe to drink?

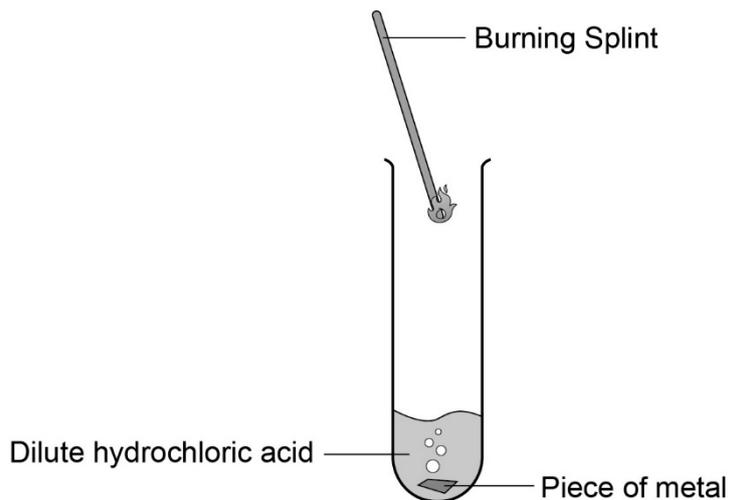
[2 marks]  
Outcome 10

1 .....

2 .....

**Turn over for the next question**

7. Acids react with some metals to produce hydrogen.



(a) Name a metal that could be used safely in this experiment.

[1 mark]  
Outcome 1

.....

(b) How would you know that hydrogen was produced?

[1 mark]  
Outcome 1

.....

(c) Suggest **two** ways to make this reaction go faster.

[2 marks]  
Outcome 4

1 .....

2 .....

8. Copper oxide reacts with dilute sulfuric acid to produce a solution of a salt.

(a) Which is the correct word equation for this reaction?

[1 mark]  
Outcome 2

Tick (✓) **one** box.

copper oxide + sulfuric acid  $\longrightarrow$  copper chloride + water

copper oxide + sulfuric acid  $\longrightarrow$  copper sulfate + hydrogen

copper oxide + sulfuric acid  $\longrightarrow$  copper sulfate + water

copper oxide + sulfuric acid  $\longrightarrow$  copper nitrate + hydrogen

(b) What type of reaction is this?

[1 mark]  
Outcome 2

Tick (✓) **one** box.

combustion

neutralisation

oxidation

(c) Use the correct answer from the box to complete the sentence.

[1 mark]  
Outcome 2

<b>crystallised</b>	<b>diluted</b>	<b>dissolved</b>
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To get the solid salt the solution is .....

**Turn over for the next question**

9. Use the correct answer from the box to complete the sentence.

**[1 mark]**  
**Outcome 3**

<b>mass</b>	<b>temperature</b>	<b>volume</b>
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When ammonium chloride dissolves in water, energy is taken in from the surroundings and so the ..... of the solution decreases.

**END OF QUESTIONS**