



UNITED LEARNING

YEAR 8

SCIENCE

END OF YEAR CHEMISTRY ASSESSMENT 2022

TIME ALLOWED: 40 MINUTES

Student Name	
Class	

Total Mark

/40

QUESTION 1 – GROUP 7 ELEMENTS (6 marks)

The periodic table is divided into groups.

Fluorine (F) is in group 7.

1.1 Use your periodic table to give **one** other element in group 7.

1

1.2 Describe the pattern of reactivity in group 7.

1

1.3 How many electrons does Fluorine have on its outer shell?

1

1.4 Fluorine is an element. What is an element?

1

1.5 Fluorine reacts with lithium to make lithium fluoride.

Lithium fluoride is a compound. What is a compound?

1

Lithium fluoride can also be made by reacting an acid with an alkali.

1.6 Suggest a pH for the acid.

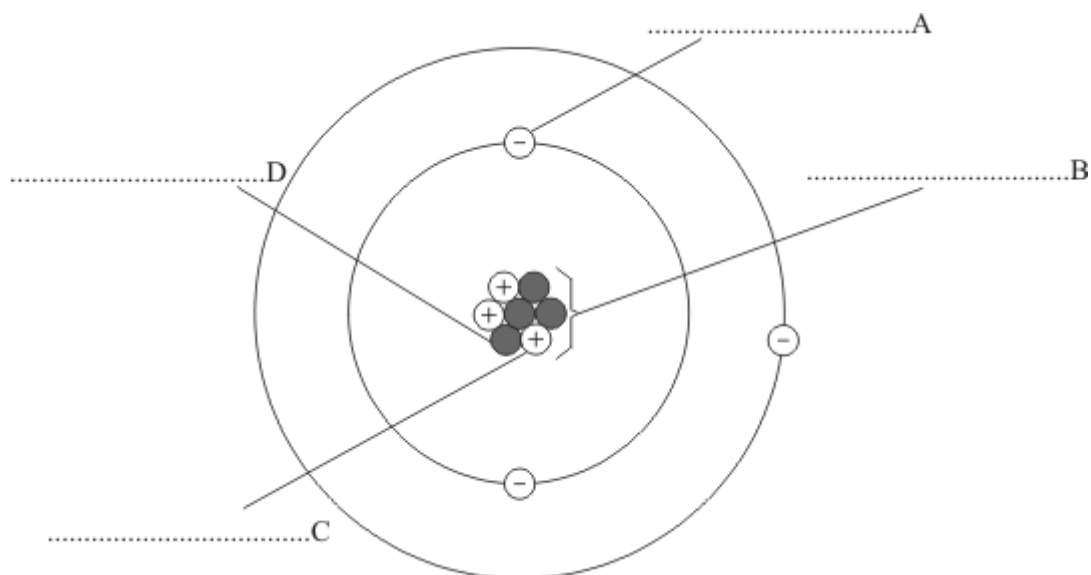
1



QUESTION 2 – THE ATOM (4 marks)

The diagram shows an atom.

On the diagram, write the names of structures **A**, **B**, **C** and **D**.



4

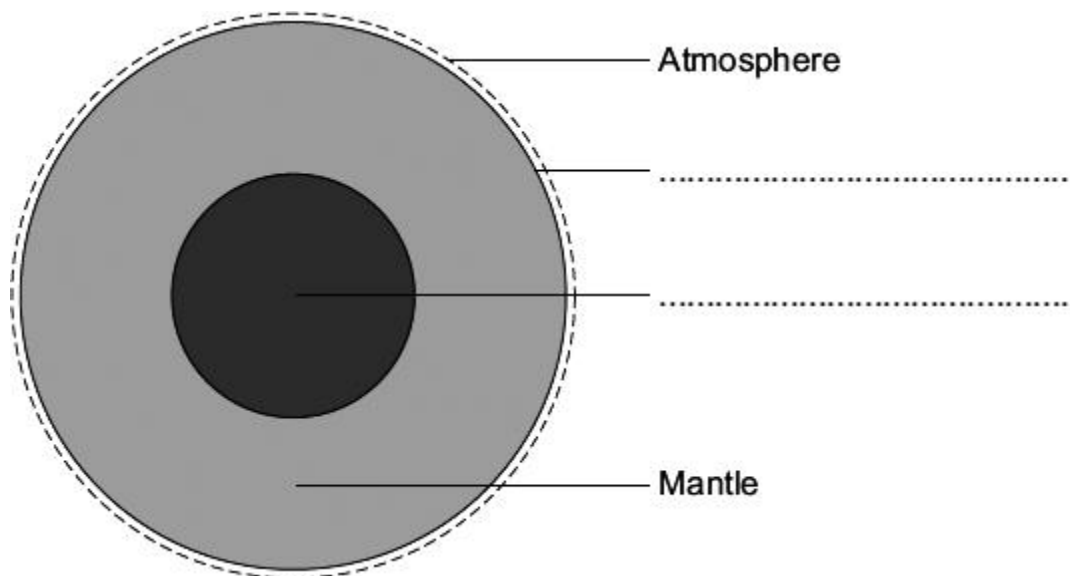
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QUESTION 3 – THE EARTH (9 marks)

The diagram gives information about some of the layers that make up the Earth.



3.1 Complete the labels on the diagram.

2

3.2 The data in the table shows the percentages of the gases in the Earth's atmosphere.

Complete the table with the missing percentages for Nitrogen and Oxygen

Name of gas	Percentage (%) of gas
Nitrogen	
Oxygen	
Other gases	1

2



3.3 In the early atmosphere carbon dioxide levels were much higher than they are today.

Give **one** reason why carbon dioxide levels decreased in this time.

1

3.4 Carbon dioxide levels are currently increasing.

Scientists think that this is due to human activity.

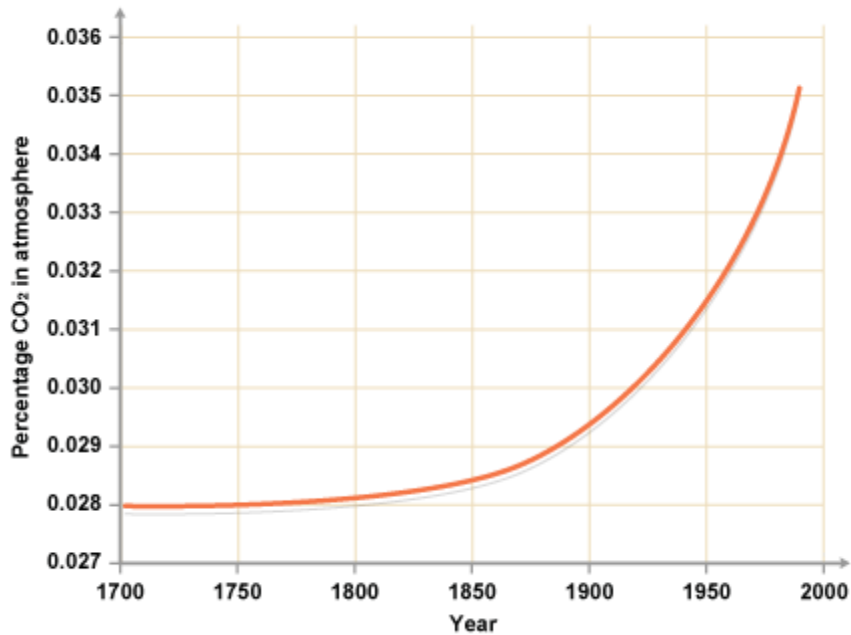
Name one human activity that is leading to this increase.

1

Turn over for the next question.



- 3.5 The graph below shows how the percentage of carbon dioxide in the atmosphere has changed over the last 300 years.



Describe how the percentage of CO₂ in the atmosphere changed between 1800 and 2000.

3



QUESTION 4 – VARIABLES (6 marks)

A scientist was investigating the reaction of sodium with water.

Her hypothesis was:

'The hotter the water, the more quickly the sodium will react'

4.1 What was the **independent** variable in this investigation?

1

4.2 What was the **dependent** variable in this investigation?

1

4.3 Suggest one **control** variable for this investigation.

1

4.4 Her results showed sodium reacts faster in hotter water.

She wanted to check the **reproducibility** of her results.

How can she check the reproducibility of her results?

1

Turn over for the next question.



4.5 Below is the word equation for the reaction between sodium and water:



46 g of sodium reacted with the water.

This formed 80 g of sodium hydroxide and 2 g of hydrogen.

Calculate the mass of water that reacted with the sodium?

2

Mass of water _____ g



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QUESTION 5 – GROUP 1 ELEMENTS (6 marks)

The melting points of the elements in Group 1 show a trend.

The table below shows the atomic numbers and melting points of the Group 1 elements.

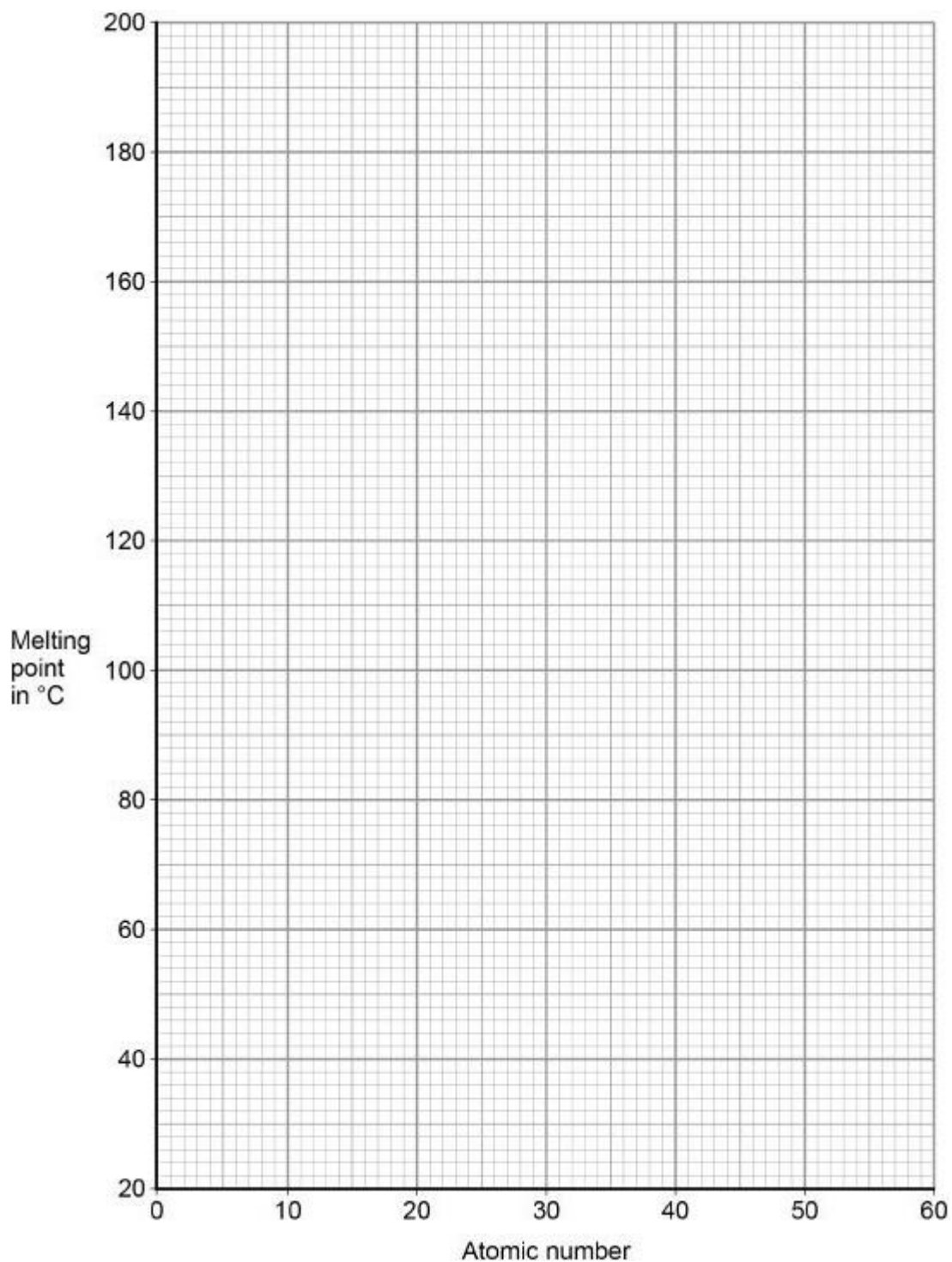
Element	Atomic number	Melting point in °C
Lithium	3	181
Sodium	11	98
Potassium	19	63
Rubidium	37	X
Caesium	55	29

5.1 Plot the data from the table on the graph on the opposite page.

You **do not** need to draw a line of best fit.

2





5.2 Predict the melting point, **X**, of rubidium, atomic number 37.

Use the graph above.

Melting point = _____ °C

1



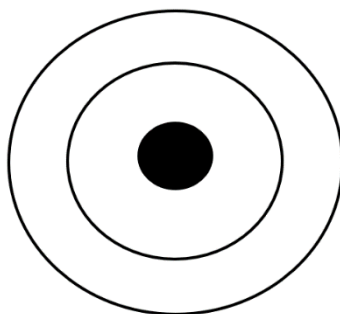
TURN OVER ►

5.3 Group 1 elements all react with oxygen.

On the diagram below draw the **electron structure** of oxygen

Use your periodic table to help you.

2



5.4 The elements in group 1 are metals.

Give **one** property of typical metals that group 1 elements have.

1



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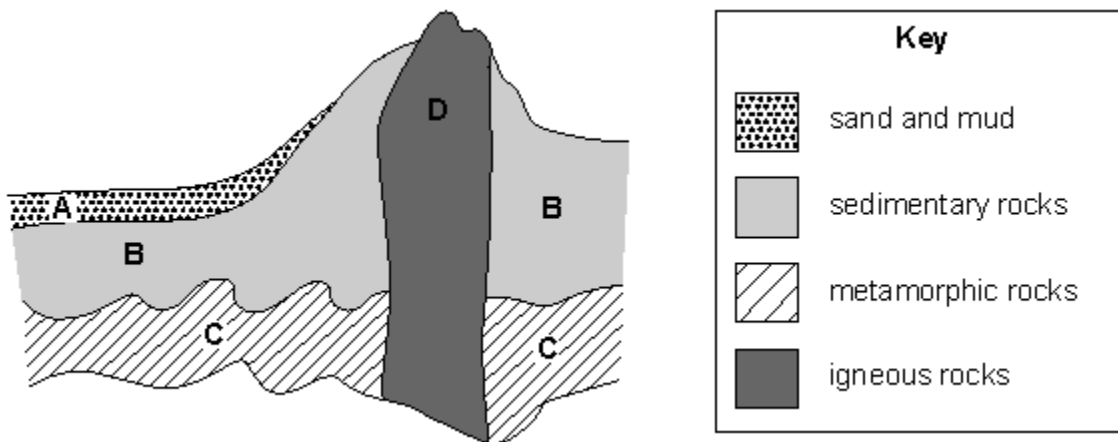
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QUESTION 6 – ROCKS (9 marks)

The diagram shows rocks in a mountain range.



6. 1 Choose the correct letter from the diagram to best match the descriptions below.

You may write each letter more than once.

- the oldest rock shown in the diagram.

- region where eroded materials are deposited.

- region not being affected by erosion.

3



6.2 Space probes have shown that there are mountains, dry river-valleys, and volcanoes on Mars.

Using the information above, explain why Mars has all three types of rock: **igneous**, **metamorphic**, and **sedimentary**.

3

6.3 Molten rock cools to form solid rock.

Describe how the **movement** of particles in the rock change as it cools from a liquid to a solid.

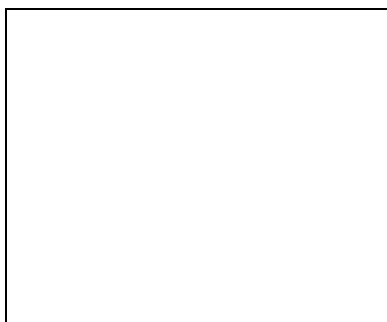
2

Turn over for the next question.



6.4 In the box below, draw the **arrangement** of particles for a liquid.

Draw **at least** 8 particles.



END OF ASSESSMENT



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