

Group 1 Elements

Question Paper

Level	GCSE
Subject	Chemistry
Exam Board	Edexcel IGCSE
Module	Double Award (Paper 1C)
Topic	Chemistry of the Elements
Sub-Topic	Group 1 Elements-lithium, sodium & potassium
Booklet	Question Paper

Time Allowed: 25 minutes

Score: /21

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	70%	60%	55%	50%	<50%

1 The table gives information about the first three elements in Group 1 of the Periodic Table.

Element	Atomic number	Relative atomic mass	Electronic configuration	Density in g/cm ³	Melting point in C
lithium	3	7	2.1	0.53	180
sodium	11	23	2.8.1	0.97	98
potassium	19	39	2.8.8.1	0.86	64

(a) Which information shows that the elements have similar chemical properties?

Give a reason for your choice.

(2)

Information.....

Reason.....

(b) The elements in Group 1 show a clear trend (regular pattern) in some of their **physical** properties.

Identify the physical property that shows a clear trend.

(1)

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(c) The elements also show a clear trend in their **chemical** properties, such as their reaction with water.

When a small piece of lithium is added to water it fizzes gently and eventually disappears to form a solution.

(i) Describe a test to show that the gas given off is hydrogen.

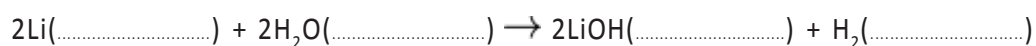
(1)

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(ii) Complete the equation for the reaction by inserting the state symbols.

(1)



(iii) State and explain the effect that the solution formed has on red litmus paper.

(2)

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(d) State two similarities and two differences between the reactions of lithium and potassium with water.

(4)

Similarities

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Differences

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(e) When lithium burns in oxygen it forms lithium oxide (Li_2O).

(i) Write a chemical equation for the reaction between lithium and oxygen.

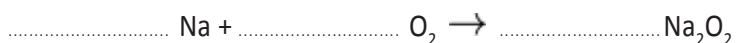
(2)

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(ii) When sodium burns in oxygen, one of the products is sodium peroxide (Na_2O_2).

Balance the equation to show the formation of sodium peroxide.

(1)



(Total for Question 1= 14 marks)

2 This question is about elements in Group 1 of the Periodic Table.

(a) Which statement about lithium is correct?

(1)

- A It is a good electrical conductor and forms an acidic oxide
- B It is a poor electrical conductor and forms an acidic oxide
- C It is a good electrical conductor and forms a basic oxide
- D It is a poor electrical conductor and forms a basic oxide

(b) A small piece of sodium is added to a large trough of water.

(i) State two observations that could be made.

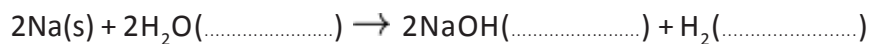
(2)

1

2

(ii) Complete the equation for this reaction by inserting the appropriate state symbols.

(2)



(c) Potassium reacts in a similar way to sodium, but is more reactive.

State one observation that could be made when a small piece of potassium is added to a large trough of water, but would not be observed with sodium.

(1)

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(d) Explain why elements in Group 1 have similar reactions.

(1)

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(Total for Question 2 = 7 marks)