

Revision PPQu: Groups 1 and 7

1. 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)

.....

.....

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

.....

.....

(Total for question = 7 marks)

2. The halogens are elements in Group 7 of the Periodic Table.

(a) Put a cross ☐ in the box to indicate your answer.

(i) Chlorine gas is

(1)

☐ **A** brown

☐ **B** colourless

☐ **C** green

☐ **D** violet

(ii) At room temperature, the physical state of bromine is

(1)

☐ **A** solid

☐ **B** liquid

☐ **C** gas

☐ **D** aqueous solution

(b) Which is the most reactive element in Group 7?

(1)

.....

(c) Chlorine reacts with hydrogen to form a colourless gas that dissolves in water to form an acid.

(i) What is the name of the colourless gas?

(1)

.....

(ii) What is the name of the acid?

(1)

.....

(iii) What is the formula that is used to represent both the colourless gas and the acid?

(1)

.....

(Total for Question = 6 marks)

3. A teacher added some of the Group 1 elements to separate samples of water.

(a) State two observations that could be made when a small piece of sodium is added to a large trough containing water. (2)

1

.....

2

.....

(b) In another experiment she added a small piece of a different Group 1 element and noticed that the reaction was less vigorous. Which element did she add in this experiment? (1)

.....

(c) In another experiment she added a small piece of potassium to a large trough containing water. This time she observed a lilac flame.

(i) Identify the gas that burned. (1)

.....

(ii) Give the formula of the ion that caused the flame to be lilac. (1)

.....

(Total for Question = 5 marks)

4. The halogens are elements in Group 7 of the Periodic Table. The halogens react with metals to form compounds called halides.

Table 1 shows information about some halogens and their halides.

Halogen	Appearance at room temperature	Halide	Melting point in °C
chlorine	green gas	lithium chloride	605
bromine	red-brown liquid	sodium bromide	747
iodine	grey solid	potassium iodide	681

Table 1

(a)

- (i) Predict the physical state of fluorine at room temperature. (1)

.....

- (ii) Predict how the colour of astatine at room temperature compares with the colour of iodine. (1)

.....

- (b) Each of the halides in table 1 was dissolved in water to form a solution. A sample of each of the halogens was then added to some of the halide solutions. Table 2 shows the results.

Halide	Halogen added		
	Chlorine	Bromine	Iodine
lithium chloride	not done	no reaction	no reaction
sodium bromide	orange solution	not done	no reaction
potassium iodide	brown solution	brown solution	not done

Table 2

- (i) Suggest why there is no reason to add chlorine to lithium chloride solution. (1)

.....

.....

- (ii) Why was there no reaction when iodine was added to sodium bromide solution? (1)

.....

.....

(iii) Name the substance with the brown colour that formed when chlorine was added to potassium iodide solution. (1)

.....

(iv) The reaction between bromine and potassium iodide solution is a displacement reaction. What is the correct description of this reaction? (1)

- ☐ **A** bromide displaces iodide
- ☐ **B** bromine displaces iodide
- ☐ **C** bromide displaces iodine
- ☐ **D** bromine displaces iodine

(v) Complete the chemical equation for the reaction between chlorine and potassium bromide solution. (1)



(Total for Question = 7 marks)

END OF QUESTIONS
TOTAL MARKS FOR QUESTIONS: 25

Extension:

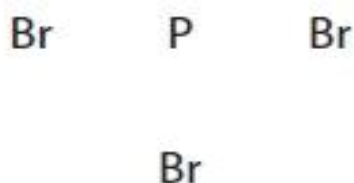
5. Bromine and iodine are halogens.

- (a) Complete the table by giving the colour and physical state of each of these halogens at room temperature. (2)

Halogen	Colour	Physical state
bromine	red-brown	
iodine		solid

- (b) Bromine reacts with phosphorus to form the covalent compound phosphorus tribromide.

Draw a dot and cross diagram to show the outer electrons in a molecule of phosphorus tribromide. (2)



- (c) Phosphorus tribromide reacts with water to form a mixture of two acids, HBr and H_3PO_3

Write a chemical equation for this reaction. (2)

.....

(Total for question = 6 marks)