KS3 SCIENCE · CHEMISTRY

The periodic table: exam questions

Name _____
Total: 21 marks

1 State two properties of a typical metal. **[2 marks]**

2 Copper is used to make electrical wires. Give two properties of copper that make it suitable for this. **[2 marks]**

3 In the periodic table, state what is meant by (a) a group and (b) a period. **[2 marks]**

4 Describe two things that Mendeleev did when he made his periodic table. **[2 marks]**

5 Element X is in Group 2, on the left-hand side of the periodic table. Predict whether X is a metal or a non-metal. Give a reason. **[2 marks]**

6 A small piece of sodium is added to a trough of water. **[3 marks]**
(a) Describe two things you would see.
(b) Name the gas that is made.

7 Complete the word equation: potassium + water → _____ + _____ **[2 marks]**

8 Lithium, sodium and potassium are in Group 1. Rubidium is below potassium. **[2 marks]**
(a) State how the reactivity of the metals changes going down Group 1.
(b) Predict how the reaction of rubidium with water compares with that of potassium.

9 Argon is in Group 0. It is used to fill light bulbs that have a hot metal filament. **[2 marks]**
(a) Give the name of the elements in Group 0.
(b) Explain why argon is used and not air.

10 Chlorine melts at −101 °C, bromine at −7 °C and iodine at 114 °C. They are in Group 7, in that order going down. **[2 marks]**
(a) Describe the trend in melting point going down Group 7.
(b) Astatine is below iodine. Predict whether it melts above or below 114 °C.

The periodic table: mark scheme

Total: 21 marks

1 [2 marks]

- Any one of: shiny; good conductor of electricity; good conductor of heat; malleable; ductile (accept: solid at room temperature, high melting point, sonorous) **(1)**
- A second, different property from that list **(1)**

2 [2 marks]

- It is a good conductor of electricity **(1)**
- It is ductile (accept: it can be pulled into a wire; it is malleable; it bends without breaking) **(1)**

3 [2 marks]

- (a) A column of the periodic table (accept: elements with similar properties) **(1)**
- (b) A row of the periodic table **(1)**

4 [2 marks]

- Any one of: he put the elements in order of the mass of their atoms (accept: atomic weight); he put elements with similar properties in the same column; he left gaps for elements that had not been discovered; he predicted the properties of the missing elements **(1)**
- A second, different point from that list **(1)**

5 [2 marks]

- A metal **(1)**
- Metals are on the left of the periodic table (accept: the elements in Group 2 are all metals) **(1)**

6 [3 marks]

- (a) Any one of: it floats; it fizzes (accept: bubbles); it melts into a ball; it moves around on the surface; it gets smaller until it has gone **(1)**
- (a) A second, different observation from that list **(1)**
- (b) Hydrogen **(1)**

7 [2 marks]

- Potassium hydroxide **(1)**
- Hydrogen **(1)**

8 [2 marks]

- (a) It increases **(1)**
- (b) Rubidium reacts more violently (accept: faster; it explodes) **(1)**

9 [2 marks]

- (a) The noble gases **(1)**
- (b) Argon is unreactive (accept: inert), so the hot filament does not react with it (accept: the filament would react with the oxygen in air; it would burn away in air) **(1)**

10 [2 marks]

- (a) The melting point increases going down the group **(1)**
- (b) Above 114 °C (accept: any temperature higher than 114 °C) **(1)**