

Using symbols and the periodic table

Grade 8 science (Year 9 · Class 8) · Test answers (mark scheme)

The model answers show what earns full marks. Look at the marking notes to see where marks are awarded, and notice that explanations need a reason as well as a statement.

Level: Grade 8 science (Year 9 · Class 8) · **Curriculum:** MS-PS1-1

Question 1 Symbols (3 marks)

(a) **Na.** (b) **Fe.** (c) **K.**

Marking: 1 mark each; the capital letter must be correct.

Question 2 Using the table (3 marks)

(a) **Magnesium.** (b) **Ne and Ar.** (c) **Chlorine (Cl).**

Marking: 1 mark each.

Question 3 Compound or mixture (2 marks)

In a mixture the iron and sulfur are not chemically joined, so each keeps its own properties and a magnet can remove the iron. In a compound, iron sulfide, they are chemically joined in a fixed ratio and the properties are new.

Marking: 1 mark for a mixture description, 1 mark for a compound description.

Question 4 Metals and non-metals (3 marks)

Metals are shiny and conduct electricity well; non-metals are dull and are usually poor conductors. Metals are malleable but solid non-metals are brittle.

Marking: 1 mark for each correct property of metals and 1 for each matching property of non-metals, maximum 3.

Question 5 Fixed ratio (3 marks)

(a) $15.0 \div 6.0 = 2.5$ times as much, so $2.5 \times 4.0 =$ **10.0 g of oxygen.** (b) $15.0 + 10.0 =$ **25.0 g.**

Marking: 1 mark for the scale factor, 1 for the oxygen mass, 1 for the oxide mass.

Question 6 Noble gases (2 marks)

Neon is a noble gas in group 18 and its atoms are very unreactive, so it does not react with oxygen or burn. It glows when electricity passes through the gas.

Marking: 1 mark for unreactive/group 18, 1 mark for not burning.

Question 7 Spot the mistake (2 marks)

Sodium and chlorine are chemically joined, so salt is a compound. A mixture is not chemically joined, and salt has properties unlike sodium or chlorine.

Marking: 1 mark for compound, 1 mark for the reason.

Question 8 Predict rubidium (2 marks)

Rubidium is a soft, shiny metal and, like the other alkali metals, it reacts quickly with water. Its reactivity is higher than potassium because reactivity increases down group 1.

Marking: 1 mark for two properties, 1 mark for the comparison.