

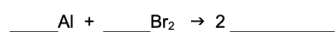
Conservation of mass and balanced equations

Q1. (2018)

0 4 . 4 Aluminium reacts with bromine to produce aluminium bromide.

Complete the balanced chemical equation for this reaction.

[2 marks]



Q2. (2020)

0 3 Some students investigated the thermal decomposition of metal carbonates.

The word equation for the reaction is:



The students made the following hypothesis:

'When heated the same mass of any metal carbonate produces the same mass of carbon dioxide.'

The students heated a test tube containing copper carbonate.

Table 1 shows their results.

Table 1

Time the test tube containing copper carbonate was heated in mins	0	2	4	6
Mass of test tube and contents in g	17.7	17.1	17.0	17.0

Plan a method the students could use to test their hypothesis.

You should show how the students use their results to test the hypothesis.

You do **not** need to write about safety precautions.

[6 marks]

Q3. (2020)

0 4 . 7 Complete the symbol equation for the preparation of sodium sulfate.

You should balance the equation.

[2 marks]



Q4. (2021)

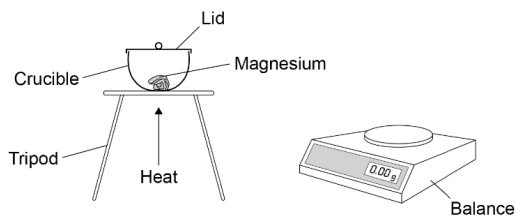
0 6

Metal oxides are produced when metals are heated in air.

A student investigated the change in mass when 0.12 g of magnesium was heated in air.

Figure 5 shows the apparatus.

Figure 5



The student measured the mass of magnesium oxide produced.

0 6 . 2

The student repeated the experiment **without** a lid on the crucible.

Suggest why the mass of magnesium oxide produced would be different without a lid on the crucible.

[2 marks]

Q5. (2021)

0 6 . 4

Iron reacts with oxygen to produce an oxide of iron.

0.015 moles of iron reacts with 0.010 moles of oxygen gas (O_2).

Determine:

- the formula of the iron oxide produced
- the balanced symbol equation for the reaction.

[4 marks]

Formula of iron oxide = _____

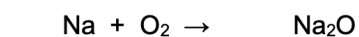
Balanced symbol equation

Q6. (2023)

Sodium reacts with oxygen to produce sodium oxide.

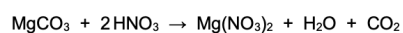
0 3 . 1

Balance the equation for the reaction.

[1 mark]

Q7. (2024)

The equation shows the reaction between magnesium carbonate and nitric acid.



04.5

What is the ratio of the number of moles of magnesium carbonate to the number of moles of nitric acid in the reaction?

[1 mark]

Tick (✓) **one** box.

1 : 1 ☐

1 : 2 ☐

2 : 1 ☐

2 : 2 ☐