

AQA, OCR, Edexcel

GCSE Science

GCSE Chemistry

**Chemical Measurements and
Relative Formula Mass
Answers**

M M E

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Total Marks: /24

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Conservation of mass and balanced chemical equations

Q1: State **the law of conservation of mass**.

A= No atoms are lost or made during a chemical reaction (1 mark). The mass of products equals the mass of reactants (1 mark).

(2 marks)

Q2: How is the law of conservation of mass applied in chemical reaction formulas involving symbols?

A= Chemical reactions can be represented by symbol equations which are balanced on either side (1 mark).

(1 marks)

Relative formula mass

Q3: Define what is meant by the relative formula mass of a compound.

A= The relative formula mass of a compound, is the sum of the relative atomic masses of the atoms (1 mark) in the numbers shown in the formula (1 mark).

(2 marks)

Q4: Using the periodic table, state the relative formula mass of the following compounds.

MgO

A= Mg = 24 O=16 MgO= 40 (2 marks)

NH₃

A= N= 14 H= 3 NH₃ = 17 (2 marks)

(4 marks)

Q5: Balance the equation then fill in the relative formula mass in the boxes.



Relative atomic mass of H:

1.008

Number of atoms: **6**

Relative formula mass H₂:

6.048

Relative atomic mass N:

14.007

Number of atoms: **2**

Relative formula mass

N₂: **28.014**

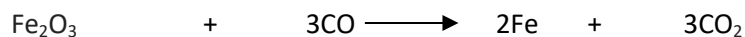
Relative formula mass of

NH₃: **34.062**

1 mark for each correct box and then an additional mark for all 6 boxes correct. (7 marks)

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Q6: Complete the following table for this equation.

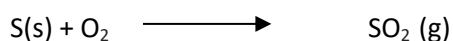


Compound or Element	Relative Formula Mass
Fe_2O_3	159.69
3CO	84
2Fe	111.6
3CO_2	132

(4 marks)

Mass change

Q7: From reading the equation below and looking at the state symbols, why may the measured mass of the products in this reaction be different to the mass of the reactants?



A= In this reaction, the product sulphur dioxide is released as gas (1 mark). This means its mass is difficult to measure (1 mark).

(2 marks)

Chemical measurements

Q8: Whenever a measurement in chemistry is made, there is a degree of uncertainty in the result. How can we measure uncertainty?

A= The uncertainty is +/- half the range (1 mark). This means that the mean value can be given as the mean value +/- half the range (1 mark).

(2 marks)