

MARKING GUIDELINE

SECTION A

QUESTION 1

1.1.1 C ✓

1.1.2 B ✓

1.1.3 D ✓

1.1.4 B ✓

1.1.5 D ✓

[5]

1.2.1 D ✓

1.2.2 C ✓

1.2.3 G ✓

1.2.4 E ✓

1.2.5 B ✓

[5]

[10]

SECTION B

QUESTION 2

2.1 A – Electron(s) ✓ (ONLY accept **Electron** OR **Electrons** as correct)

B – Proton(s) ✓ (ONLY accept **Proton** OR **Protons** as correct)

C – Neutron(s) ✓ (ONLY accept **Neutron** OR **Neutrons** as correct) (3)

2.2 A **OR** Electrons ✓ (1)

2.3 Number of positively charged particles is equal to the number of negatively charged particles. ✓

OR

Number of protons (4) is equal to the number of electrons (4). (1)

[5]

QUESTION 3

3.1.1 Calcium ✓ (1)

3.1.2 Mg ✓ (1)

3.1.3 A substance that consists of atoms of only one/the same kind. ✓

OR

A substance which cannot be broken down into simpler substances. ✓ (1)

3.2.1 C **OR** D ✓ (1)

3.2.2 A **OR** F ✓ (1)

3.2.3 B **OR** E ✓ (1)

3.2.4 C ✓ (1)

3.2.5 A ✓ (1)

QUESTION 4

4.1 Diagram B ✓ (1)

4.2 **Note:** For convenience, the answer for question 4.2 are provided in table format. Learners were not expected to give their answer in a table.

Gas	Solid	Marking criteria
Particles are widely spaced with no particular arrangement.	Particles are closely packed in regular arrangement	Any ONE of the corresponding differences for ONE mark ✓
Particles can move very fast	Particles do not move but vibrate in set positions	
There are weak forces between particles	Strong forces between particles hold them together	
There are large open spaces between particles	There are small open spaces between particles	

(1)

4.3 Energy of the solid particles will increase. ✓
OR
 Particles of the solid substance will vibrate faster. ✓
OR
 Forces between particles will become weaker. ✓
OR
 Solid substance may melt / turn into liquid. ✓
OR
 Particles of the solid substance will move further apart. ✓ (1)

4.4 Evaporation ✓ (1)

4.5 Gas particles have **sufficient energy to overcome forces** ✓ between them. Therefore, **gas particles can move far from one another** ✓ to fill the volume of a container. (2)

4.6 By cooling the gas enough (until it turns into a liquid). ✓
OR
 By compressing a gas (in a smaller container) / By increasing the pressure on a gas. ✓ (1)

[7]

QUESTION 5

5.1 **Condensation** of hot water vapour on the cold plastic sheet. ✓ (1)

5.2 The temperature of the cold water and the surrounding air is lower, hence less water vapour and no visible formation of droplets. ✓

OR

The air above the cold water is already cold and very little condensation takes place on the plastic sheet, therefore, no water droplets are observed. ✓ (1)

5.3.1 Controlled variable ✓ (1)

5.3.2 Independent variable ✓ (1)

5.3.3 Dependent variable ✓ (1)

[5]

QUESTION 6

6.1 Higher density ✓ (1)

6.2 The glass block sank to the bottom ✓ of the cylinder containing water (liquid) and therefore, has a HIGHER density than the water.

OR

If the density of the glass block was lower than that of the water, it would have floated on top of the water. ✓ (1)

6.3 Volume = Length x Breadth x Height = $4 \times 5 \times 3 = 60 \text{ cm}^3$ ✓

OR

Volume = $235 - 175 = 60 \text{ cm}^3$ ✓ (1 ml = 1 cm^3) (1)

6.4 Density = Mass / Volume ✓

$$= 180 / 60 \text{ ✓}$$

$$= 3 \text{ g/cm}^3 \text{ ✓}$$

Positive marking
"With mistake"

(3)

Criteria	Marks
Formula	1
Substitution Step (Units count no marks in this step and can be omitted)	1
Answer and Unit must be correct	1

[6]

QUESTION 7

7.1 smaller than ✓

7.2 move further apart ✓

7.3 become larger ✓

7.4 expand ✓

7.5 does not fit ✓

7.6 volume ✓

[6]

QUESTION 8

8.1 A process that rearranges atoms to form new substances. ✓

OR

A process where reactants transform into new substances (products)
by breaking and forming chemical bonds. ✓ (1)

8.2 Product: Magnesium oxide ✓ (1)

8.3 Reactants: Magnesium and Oxygen (Both reactants for TWO marks) ✓ (1)

[3]

SECTION A: 10 MARKS

SECTION B: 40 MARKS

GRAND TOTAL: 50 MARKS