

NATURAL SCIENCES GR 8

JUNE 2024

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. ✓ (1)

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 = $4 \times 5 \times 3 = 60 \text{ cm}^3$ ✓ (1)

OR

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

6.4 Density = Mass / Volume ✓
 $= 180 / 60$ ✓
 $= 3 \text{ g/cm}^3$ ✓ (3)

Positive marking
"With mistake"

| 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**