



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATURAL SCIENCES GRADE 9

TERM 2 TOPIC TEST NO. 2

Topic: Reaction of Metals & Non-Metals with Oxygen

Marks: 20

Time: 20 minutes

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Question 1

Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question number (1.1 – 1.5), e.g., 1.6 D.

1.1 Carbon dioxide is formed through a chemical reaction between carbon and ...

- A hydrogen.
- B oxide.
- C water.
- D oxygen.

(1)

1.2 Which one of the following best describes a slow chemical reaction between a metal and oxygen?

- A Burning with a flame.
- B Melting.
- C Rusting.
- D Boiling.

(1)

1.3 The reaction of magnesium (metal) with oxygen will always give a product ...

- A magnesium salts.
- B magnesium hydroxides.
- C magnesium oxides.
- D magnesium dioxides.

(1)

1.4 The general equation for the reaction of non-metals with oxygen can be represented as ...

- A oxygen + non-metal $\rightarrow$ non-metal oxide
- B water $\rightarrow$ non-metal + oxygen
- C non-metal $\rightarrow$ oxygen + water
- D non-metal oxide + oxygen $\rightarrow$ non-metal

(1)

1.5 Which of the following is an example of a non-metal oxide?

- A MgO
- B CaO
- C Na₂O
- D CO₂

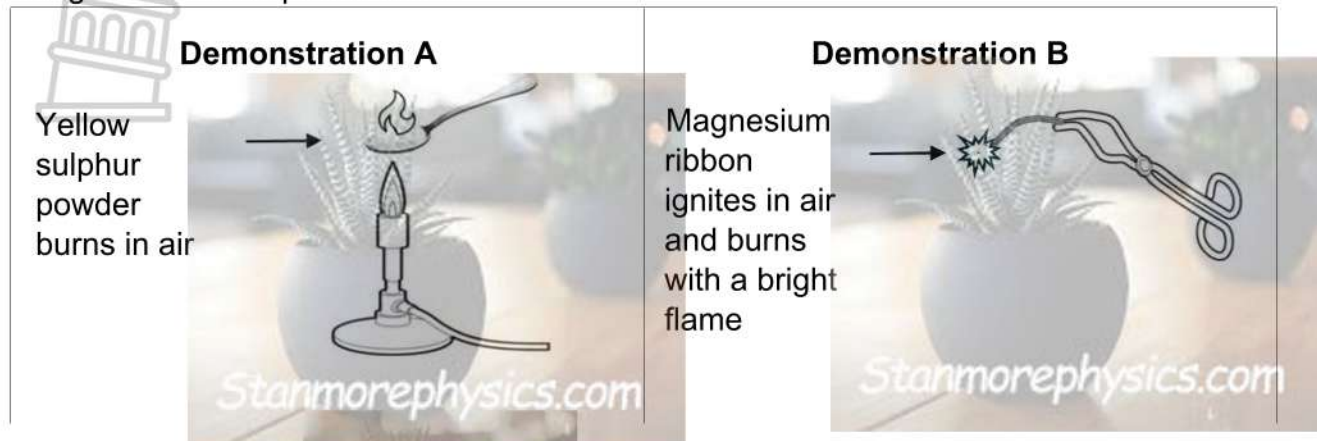
(1)

[5]

Question 2

The diagram below shows an experiment where the combustion of two elements is demonstrated. In **Demonstration A**, a small amount of sulphur powder (a spoonful) is heated over a flame until it ignites spontaneously in the air.

In **Demonstration B**, a shiny strip of magnesium ribbon is gripped with tongs, heated, and ignites when exposed to air.



- 2.1 Identify the reactant required for the combustion of the elements in both **Demonstration A and B**. (1)
- 2.2 The yellow sulphur powder in **Demonstration A** burns with a bluish purple flame and gives off a suffocating smell.
- 2.2.1 Write down the chemical symbol of the element sulphur. (1)
- 2.2.2 Classify sulphur as a metal or a non-metal. (1)
- 2.2.3 Give the NAME of the product that forms when sulphur combusts (burns) in air. (1)
- 2.2.4 Is the product mentioned in question 2.2.3 a solid, a liquid or a gas? (1)
- 2.2.5 Write down the balanced chemical equation for the reaction that takes place when sulphur combusts in air. (3)
- 2.3 Consider Demonstration B and answer 2.3.1 to 2.3.4.
- 2.3.1 Classify magnesium as a metal or a non-metal. (1)
- 2.3.2 What is the **COLOUR** of the bright flame when magnesium burns in air? (1)
- 2.3.3 Write down the word equation for the reaction that takes place in **Demonstration B**. (3)
- 2.3.4 Describe what the product of this combustion reaction looks like. Include its colour AND whether it is a solid, liquid, or gas. (2)

[15]

Total Marks: 20



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**NATURAL SCIENCES GRADE 9
TERM 2 TOPIC TEST NO. 2 MEMORANDUM**

Topic: Reaction of Metals & Non-Metals with Oxygen

Marks: 20

Time: 20 minutes

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Question 1

- | | | |
|-----|----|------------|
| 1.1 | D✓ | (1) |
| 1.2 | C✓ | (1) |
| 1.3 | C✓ | (1) |
| 1.4 | A✓ | (1) |
| 1.5 | D✓ | (1) |
| | | [5] |

Question 2

- | | | |
|-------|---|-------------|
| 2.1 | Oxygen or O ₂ ✓ | (1) |
| 2.2.1 | S✓ | (1) |
| 2.2.2 | Non-metal✓ | (1) |
| 2.2.3 | Sulfur dioxide✓ | (1) |
| 2.2.4 | Gas✓ | (1) |
| 2.2.5 | S✓ + O ₂ ✓ → SO ₂ ✓ | (3) |
| | | |
| 2.3.1 | Metal✓ | (1) |
| 2.3.2 | White✓ | (1) |
| 2.3.3 | Magnesium✓ + Oxygen✓ → Magnesium Oxide✓ | (3) |
| 2.3.4 | White solid/ Powder ✓✓ | (2) |
| | | [15] |

Total Marks: 20

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