

# SMARTWIZ

## GRADE 8 NATURAL SCIENCE EXAM

**MARKS: 50**

MARKS	

**TIME: 2 hours**

**SCHOOL** \_\_\_\_\_

**CLASS (e.g. 4A)** \_\_\_\_\_

**SURNAME** \_\_\_\_\_

**NAME** \_\_\_\_\_

MYST PATHWORKS

### Instructions for Students:

- > Read all instructions carefully before beginning the exam.
- > Write your name and student ID clearly on the answer sheet/booklet.
- > Answer all questions unless otherwise stated.
- > Show all your work/calculations where applicable.
- > Write clearly and legibly.
- > Use blue or black ink only. \* Do not use correction fluid/tape.
- > No electronic devices (calculators, phones, etc.) are allowed unless explicitly permitted.
- > Raise your hand if you have any questions.
- > Do not talk to other students during the exam.
- > Any form of cheating will result in disqualification.

**This test consists of 4 pages, excluding the cover page.**

## SECTION A: HUMAN BODY SYSTEMS

(20 Marks)

### QUESTION 1: THE RESPIRATORY SYSTEM

1.1 Name two organs involved in the respiratory system.

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(2)

1.2 What is the main function of the lungs?

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(2)

1.3 Explain what happens during inhalation.

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(3)

1.4 What is gas exchange?

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(2)

1.5 Why is oxygen important for the body?

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(2)

## SECTION B: CHEMICAL CHANGE AND REACTIONS

(15 Marks)

### QUESTION 2: CHEMICAL REACTIONS

2.1 Define a chemical reaction.

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(2)

2.2 List two signs that a chemical reaction has occurred.

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(2)

2.3 Write the chemical formula for water.

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(1)

2.4 What are the reactants and products in a chemical reaction?

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(2)

2.5 Explain what happens when vinegar reacts with baking soda.

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(3)

## SECTION C: EARTH AND SPACE SCIENCE

(15 Marks)

### QUESTION 3: THE SOLAR SYSTEM

3.1 Name the planet closest to the Sun.

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(1)

3.2 What is a satellite? Give one example.

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(2)

3.3 Draw and label the phases of the Moon. (5)



3.4 Explain why we have day and night.

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(3)

3.5 What causes a solar eclipse?

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(2)

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**TOTAL: 50 MARKS**



## **MEMO**

### **SECTION A: HUMAN BODY SYSTEMS**

**(20 Marks)**

1.1 Two organs involved in the respiratory system:

- Lungs
- Trachea
- Bronchi (any two) (2)

1.2 The main function of the lungs is to exchange oxygen and carbon dioxide between the air and blood. (2)

1.3 During inhalation, the diaphragm contracts and moves down, the ribcage expands, and air is drawn into the lungs. (3)

1.4 Gas exchange is the process where oxygen is taken into the blood and carbon dioxide is removed from it in the lungs. (2)

1.5 Oxygen is important because it is needed by cells to produce energy during respiration. (2)

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### **SECTION B: CHEMICAL CHANGE AND REACTIONS**

**(15 Marks)**

2.1 A chemical reaction is a process where substances (reactants) change into new substances (products). (2)

2.2 Two signs of a chemical reaction:

- Formation of gas (bubbles)
- Change in colour
- Temperature change
- Formation of a precipitate (any two) (2)

2.3 Chemical formula for water:  $\text{H}_2\text{O}$  (1)

2.4 Reactants are the starting substances, and products are the new substances formed during the reaction. (2)

2.5 When vinegar (acid) reacts with baking soda (base), carbon dioxide gas is produced, causing bubbling and fizzing. (3)

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## SECTION C: EARTH AND SPACE SCIENCE

(15 Marks)

3.1 The planet closest to the Sun is **Mercury**. (1)

3.2 A satellite is an object that orbits a planet; example: the Moon. (2)

3.3 Phases of the Moon (should include and label):

- New Moon
- Waxing Crescent
- First Quarter
- Waxing Gibbous
- Full Moon

(5)

3.4 We have day and night because the Earth rotates on its axis; the side facing the Sun has day, and the side away has night. (3)

3.5 A solar eclipse happens when the Moon passes between the Earth and the Sun, blocking the Sun's light. (2)

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**TOTAL: 50 MARKS**