

# 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: LIFE AND LIVING

(20 Marks)

### QUESTION 1: CELLS AND MICROSCOPES

1.1 What is the basic unit of life?

\_\_\_\_\_ (1)

1.2 Name two organelles found in plant cells but not in animal cells.

\_\_\_\_\_

\_\_\_\_\_ (2)

1.3 Draw and label a simple plant cell.



(5)

1.4 What is the function of the **cell membrane**?

\_\_\_\_\_ (2)

\_\_\_\_\_

### QUESTION 2: REPRODUCTION IN PLANTS

2.1 What process do plants use to reproduce?

\_\_\_\_\_ (1)

2.2 Name two parts of a flower involved in reproduction.

\_\_\_\_\_

\_\_\_\_\_ (2)

2.3 What is **pollination**?

\_\_\_\_\_ (2)



2.4 Explain the difference between **self-pollination** and **cross-pollination**.

(3)

## SECTION B: MATTER AND MATERIALS

(15 Marks)

### QUESTION 3: PROPERTIES OF MATTER

3.1 Define the term **matter**.

(1)

3.2 List three physical properties of matter.

(3)

3.3 What is the difference between a **solid** and a **liquid**?

(2)

3.4 Describe what happens during **melting**.

(2)

## SECTION C: ENERGY AND CHANGE

(15 Marks)

### QUESTION 4: FORCES AND MOTION

4.1 What is a force?

(1)

4.2 Name two types of forces.

\_\_\_\_\_ (2)

4.3 What is gravity?

\_\_\_\_\_ (1)

4.4 A book weighs 10 N. What is the force acting on it called?

\_\_\_\_\_ (1)

4.5 How does friction affect motion?

\_\_\_\_\_ (2)

4.6 Draw and label a simple diagram showing the force of gravity acting on a falling object.(3)



**TOTAL: 50 MARKS**

## **MEMO**

### **SECTION A: LIFE AND LIVING**

**(20 Marks)**

#### **QUESTION 1: CELLS AND MICROSCOPES**

1.1 The basic unit of life is the **cell**. (1)

1.2 Two organelles found in plant cells but not animal cells:

- **Chloroplasts**
- **Cell wall** (2)

1.3 Simple plant cell drawing should include and label:

- Cell wall
- Cell membrane
- Nucleus
- Chloroplasts
- Cytoplasm
- Vacuole (5)

1.4 The cell membrane controls what enters and leaves the cell. (2)

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#### **QUESTION 2: REPRODUCTION IN PLANTS**

2.1 Plants reproduce by **sexual reproduction** (pollination) or **asexual reproduction**. (1)

2.2 Two parts involved in reproduction:

- **Stamen (anther and filament)**
- **Pistil (stigma, style, ovary)** (2)

2.3 Pollination is the transfer of pollen from the anther to the stigma of a flower. (2)

2.4

- **Self-pollination:** pollen from the same flower or plant fertilizes the ovule.
  - **Cross-pollination:** pollen from one plant fertilizes the ovule of a different plant. (3)
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### **SECTION B: MATTER AND MATERIALS**

**(15 Marks)**

3.1 Matter is anything that has mass and takes up space. (1)

3.2 Three physical properties of matter:

- Colour
- Shape
- Texture
- Hardness
- Size

(Any three, 3 marks)

3.3 Difference between solid and liquid:

- Solids have a fixed shape and volume.
- Liquids have a fixed volume but take the shape of the container. (2)

3.4 Melting is the process where a solid changes to a liquid when heated. (2)

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**SECTION C: ENERGY AND CHANGE****(15 Marks)**

4.1 A force is a push or pull that can change the motion of an object. (1)

4.2 Two types of forces:

- Gravity
- Friction
- Magnetic force
- Applied force

(Any two, 2 marks)

4.3 Gravity is the force that pulls objects toward the Earth's center. (1)

4.4 The force acting on the book is its **weight**. (1)

4.5 Friction slows down or resists motion between two surfaces in contact. (2)

4.6 Diagram should show:

- Object (e.g., falling ball)
  - Arrow pointing downwards labeled "Force of Gravity" or "Weight" (3)
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**TOTAL: 50 MARKS**

