# **SMARTWIZ**

#### **GRADE 7 NATURAL SCIENCE EXAM**

MARKS: 75	MARKS	
TIME: 1 hour 30 minutes		
SCHOOL		
CLASS (e.g. 4A)		
SURNAME		
NAME		-
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#### **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 6 pages, excluding the cover page.



# **TABLE SECTION A: LIFE AND LIVING (18 MARKS)**

## 1. Terminology (6 marks)

Match the term in Column A to the correct description in Column B.

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	Column A	Column B
	1.1 Carnivore	A. Transfers pollen to produce seeds
	1.2 Pollination	B. Organisms that eat only plants
	1.3 Omnivore	C. Organisms that break down dead matter
	1.4 Herbivore	D. Organisms that eat meat
	1.5 Decomposer	E. Eat both plant and animal matter

Write you	ır answers lik	te this:		
1.1	1.2	1.3	1.4	1.5

# 2. Reproduction in Plants (4 marks)

<b>2.1</b> Name two a	agents of	pollination.
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2.2 Why is seed disp	persal im	nportant for	11 11 11	11 11 11	WV (C		
		T	V/				
					Day of the last	Comment	

## 3. Food Webs (8 marks)

Study the food web below and answer the questions:

I	
Owl	
<b>3.1</b> Name a primary consumer.	(1)
3.2 Name a secondary consumer.	(1)
<b>3.3</b> What would happen to the owl if all the mice disappeared?	
	(2)
<b>3.4</b> Draw your own food web with at least 4 organisms: (4)	, ,



# **≤** SECTION B: MATTER AND MATERIALS (19 MARKS)

4. States of Matter (5 marks)
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Fill in the bla	anks:		
4.2 Ice melti	ng into water is a	tes:,, and, and, change.	(3)
5. Solution	s and Separations	(7 marks)	
<ul><li>a) Iron filing</li><li>b) Salt from</li></ul>	water:	(1) The a mixture, not a solution. (2)	
	ways to speed up diss	olving:	VORKS
1 2 <b>5.4</b> What do	es "insoluble" mean?	(2)	(1)
6. Acids ar	nd Bases in Daily I	Life (7 marks)	
<b>6.2</b> What col		er turn in a base?dling acids.	
<b>6.4</b> Complete	e the table: (4)		(1)
Substance	Acid/Base/Neutral	Found in	
Vinegar			
Toothnaste			



# SECTION C: ENERGY AND CHANGE (18 MARKS)

## 7. Energy and Fuel (6 marks)



<b>7.1</b> List two types of renewable energy:
(2)
7.2 Give one reason why fossil fuels are bad for the environment.
7.3 Complete the sentence: Energy cannot be or; it can only change form. (7.4 What kind of energy is stored in food? (1)
8. Heat Transfer (6 marks)
8.1 Match the type of heat transfer: a) Heat from the sun to Earth –
b) Touching a hot spoon –(3)  C) Heat moving through boiling water –(3)
<b>8.2</b> Why do metal spoons heat up faster than wooden ones? (2)
8.3 What is insulation?(1)
9. Electrical Circuits (6 marks)
9.1 Name two materials that conduct electricity.
1.
2(2)
<b>9.2</b> What is the function of a switch in a circuit?
(1)
<b>9.3</b> Label the missing parts in this simple circuit diagram: (3)
C
A P
Wire
Wire

SECTION D: EARTH AND	BEYOND (20 MARKS)
10. The Earth and the Moon (7 marks)	
<b>10.1</b> How many days does it take for the Moon to o <b>10.2</b> Explain why we have different moon phases.	rbit Earth? (1)
	(2)
<b>0.3</b> Name two effects of the moon on Earth.	
1(2)	
<b>0.4</b> Which heavenly body has gravity that keeps pl	lanets in orbit? (1)
10.5 Why can astronauts float on the moon?	THWORKS
11. The Earth's Layers & Volcanoes (6 mar	rks)
1.1 Name the outermost layer of Earth.	(1)
11.2 What causes earthquakes?	(2)
<b>1.3</b> How do volcanoes form?	
11.4 Is lava found inside or outside the Earth's surfa	(2)

**12.1** Label the stages below: (4)

A:
B:
C: D:
12.2 Why is the water cycle important to life? (2)
12.3 What form is water when it evaporates?(1)

TOTAL: 75 MARKS

### **MEMO**



## SECTION A: LIFE AND LIVING (18 MARKS)

#### 1. Terminology (6 marks)

- 1.1 D (Carnivore = Organisms that eat meat)
- 1.2 A (Pollination = Transfers pollen to produce seeds)
- 1.3 E (Omnivore = Eat both plant and animal matter)
- 1.4 B (Herbivore = Organisms that eat only plants)
- 1.5 C (Decomposer = Organisms that break down dead matter)

#### 2. Reproduction in Plants (4 marks)

- 2.1 Two agents of pollination:
  - Insects (bees, butterflies)
  - Wind
- 2.2 Seed dispersal is important because it helps plants spread to new areas to reduce competition and ensure survival.

#### 3. Food Webs (8 marks)

- 3.1 Primary consumer: Mouse or Grasshopper (1)
- 3.2 Secondary consumer: Snake or Owl (1)
- 3.3 If mice disappeared, owls would lose a food source and might die or move away. (2)
- 3.4 Own food web with 4 organisms (4)

[Check for correct food chain logic]



# **SECTION B: MATTER AND MATERIALS (19 MARKS)**

#### 4. States of Matter (5 marks)

- 4.1 Solid, liquid, gas (3)
- 4.2 Physical change (melting)
- 4.3 Chemical change (burning paper)

#### **5. Solutions and Separations (7 marks)**

- 5.1 a) Use a magnet (1)
- b) Evaporation (1)
- 5.2 Sand and sugar is a mixture because sand does not dissolve in water while sugar does dissolve. (2)
- 5.3 Ways to speed dissolving:
  - Stirring
  - Heating (2)
    - 5.4 Insoluble means a substance does not dissolve in a liquid. (1)

#### 6. Acids and Bases in Daily Life (7 marks)

- 6.1 Acid (lemon juice) (1)
- 6.2 Litmus paper turns blue in a base. (1)
- 6.3 Safety rule: Wear gloves, avoid contact with skin/eyes, or handle with care. (1)
- 6.4 Table:

#### **Substance Acid/Base/Neutral** Found in...

Vinegar Acid Kitchen, food

Toothpaste Base Bathroom, oral hygiene

# SECTION C: ENERGY AND CHANGE (18 MARKS)

#### 7. Energy and Fuel (6 marks)

- 7.1 Renewable energy examples:
  - Solar energy
  - Wind energy (2)
    - 7.2 Fossil fuels produce pollution and contribute to global warming. (1)
    - 7.3 Energy cannot be created or destroyed; only change form. (2)
    - 7.4 Chemical energy is stored in food. (1)

#### 8. Heat Transfer (6 marks)

- 8.1
- a) Radiation
- b) Conduction
- c) Convection (3)
- 8.2 Metal is a better conductor of heat than wood because metal particles are closer and transfer heat faster.
- 8.3 Insulation prevents or slows heat transfer. (1)

#### 9. Electrical Circuits (6 marks)

#### 9.1 Conductors:

- Copper
- Aluminium (2)
  - 9.2 Switch controls the flow of electricity by opening or closing the circuit. (1)
  - 9.3 Circuit diagram labels:

A: Battery B: Light bulb

C: Switch (3)



## **SECTION D: EARTH AND BEYOND (20 MARKS)**

#### 10. The Earth and the Moon (7 marks)

10.1 27 or 28 days (1)

10.2 Moon phases happen because of the moon's position relative to the Sun and Earth, causing different parts to be lit. (2)

PATHWORKS

10.3 Effects of the moon:

- Tides
- Light at night (2)

10.4 The Sun's gravity keeps planets in orbit. (1)

10.5 Astronauts float on the moon due to weaker gravity than on Earth. (1)

#### 11. The Earth's Layers & Volcanoes (6 marks)

- 11.1 Crust (1)
- 11.2 Earthquakes caused by tectonic plates moving or shifting. (2)
- 11.3 Volcanoes form when magma from inside the Earth escapes through cracks to the surface. (2)
- 11.4 Lava is outside the Earth's surface. (1)

#### 12. Water Cycle (7 marks)

- 12.1 Labels:
- A: Precipitation (rain)
- B: Collection (lake)
- C: Evaporation (sun heats water)
- D: Condensation (cloud formation) (4)
- 12.2 Water cycle is important because it distributes fresh water, supports life, and regulates climate. (2)
- 12.3 Water is in gas form (water vapour) when it evaporates. (1)

# END OF MEMO 75 MARKS

