SMARTWIZ

GRADE 7 NATURAL SCIENCE EXAM

MARKS: 75	MARKS	
TIME: 1 hour 30 minutes		
SCHOOL		
CLASS (e.g. 4A)		
SURNAME		
NAME		

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: CELLS AND MICROORGANISMS (20 marks)

	Name two differences between plant and animal cells. a)
	a)
	Identify the parts of a microscope in the diagram below and write their functions:
	Parts of a Microscope
	THWORKS
]	Explain the role of microorganisms in food production.
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•	TION B: ENERGY AND ELECTRICITY (20 marks)
	Define energy and give two examples of energy sources.
	a) b)
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14	. Why do we have seasons on Earth?
13	. Describe the difference between a comet and an asteroid.
12	. What causes day and night on Earth?
	CTION C: THE SOLAR SYSTEM (15 marks) List the eight planets of the solar system in order from the Sun.
10	Why is it important to conserve energy? Give two reasons. a) b)
9.	Explain how a switch works in an electric circuit.

15. Explain why water is important for living things.

	a) b) c)			
•	Describe two ways humans can conserve water at home or school. a)			
a) b) 18. What is pollution? Give one example of water pollution.				
•	Draw and label a simple diagram showing the water filtration process.			
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۱۲ ر	TION E: SCIENTIFIC SKILLS (Bonus) (5 marks)			
	You want to test which type of material is the best insulator of heat. Outline an experime			
	with:			
	Hypothesis Materials Method			

TOTAL: 75 MARKS

MEMO



SECTION A: CELLS AND MICROORGANISMS (20 marks)

- 1. What is a cell?
- A cell is the basic unit of life in all living organisms. (2)
- 2. Two differences between plant and animal cells:
- Plant cells have a cell wall; animal cells do not. (1)
- Plant cells have chloroplasts; animal cells do not. (1)
- 3. Function of the cell membrane:
- It controls what enters and leaves the cell. (2)
- 4. Microscope parts and functions (any two correct):
- Eyepiece where you look through to see the specimen.
- Objective lens magnifies the specimen.
- Stage holds the slide.
- Light source helps illuminate the specimen. (4)
- 5. Role of microorganisms in food production:
- Microorganisms like yeast help in baking bread.
- Bacteria help in making cheese and yoghurt. (4)

SECTION B: ENERGY AND ELECTRICITY (20 marks)

- 6. Definition and examples of energy:
- Energy is the ability to do work.
- Examples: sunlight, coal, wind, batteries, etc. (4)
- 7. Difference between renewable and non-renewable energy:
- Renewable energy can be replaced naturally (e.g., solar, wind).
- Non-renewable energy is limited and takes millions of years to form (e.g., coal, oil). (3)
- 8. Completed circuit diagram:
- Check if the learner added a switch and completed the wire connections properly. (3)
- 9. How a switch works:

• A switch opens or closes a circuit, allowing or stopping the flow of electricity. (2)

10. Importance of energy conservation:

- Saves resources for future generations.
- Reduces pollution and protects the environment. (4)

(7)

SECTION C: THE SOLAR SYSTEM (15 marks)

11. Planets in order from the Sun:

• Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (4)

12. Cause of day and night:

- The Earth rotates on its axis.
- One side faces the Sun (day), the other side is dark (night). (3)

13. Difference between comet and asteroid:

- A comet is a ball of ice and dust with a tail, often orbits far from the Sun.
- An asteroid is a rocky object mostly found between Mars and Jupiter. (3)

14. Why we have seasons:

• Earth is tilted on its axis as it orbits the Sun, causing different parts of the Earth to receive more or less sunlight during the year. (5)



SECTION D: WATER RESOURCES AND CONSERVATION

(20 marks)

15. Why water is important:

• Needed for drinking, growing food, cleaning, and supporting life. (2)

16. Three sources of freshwater:

• Rivers, lakes, underground aquifers, glaciers. (3)

17. Two water conservation methods:

- Fixing leaking taps
- Using buckets instead of hoses
- Watering gardens in the early morning (any two correct) (4)

18. Definition and example of pollution:

- Pollution is the contamination of the environment.
- Example: Throwing waste or chemicals into rivers. (3)

19. Water filtration diagram:

- Correct components: gravel, sand, charcoal, cotton, collection container.
- Accept any clear and labelled representation. (4)



SECTION E: SCIENTIFIC SKILLS (5 marks - BONUS)

20. Insulator experiment example:

- Hypothesis: Wool is the best insulator of heat. (1)
- Materials: thermometer, water, containers, cloth, foil, plastic wrap. (1)
- Method: Wrap containers with different materials, pour hot water inside, measure temperature drop after 10 mins. (3)

END OF MEMO

75 MARKS