



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

PROVINCIAL EXAMINATION

NOVEMBER 2017

GRADE 6

**NATURAL SCIENCES AND
TECHNOLOGY**

DISTRICT	
SCHOOL NAME	
EMIS NUMBER	
CLASS (e.g. 6A)	
SURNAME	
NAME	

GENDER:

BOY		GIRL	
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TIME: 1 hour 30 minutes

MARKS: 50

10 pages

P.T.O.

GAUTENG DEPARTMENT OF EDUCATION

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MARKS: 50

INSTRUCTIONS

1. Answer ALL the questions.
2. Write neatly and legibly.
3. Read the instructions of each question before answering.
4. All questions must be answered on the question paper.

CONTENTS OF THE QUESTION PAPER

STRANDS

NATURAL SCIENCES	ENERGY & CHANGE
	PLANET EARTH & BEYOND
TECHNOLOGY	SYSTEMS & CONTROL

- The question paper consists of **SECTION A**, **SECTION B** and **SECTION C**

SECTION A: LOWER ORDER QUESTIONS / COGNITIVE LEVEL 1	SECTION B: MIDDLE ORDER QUESTIONS/ COGNITIVE LEVELS 2, 3 & 4	SECTION C: HIGHER ORDER QUESTIONS/ COGNITIVE LEVELS 5 & 6
Q1: Electric circuits, Electrical conductors and insulators and the solar system	Q6: Movements of the Earth and Planets, Systems to solve problems. Mains electricity	Q8: The solar system, Movements of the moon, Mains electricity
Q2: Electric circuits, Mains electricity, The solar system, Movements of the Earth and Planets	Q7: Movements of the Earth and Planets, Movements of the moon	
Q3: Mains electricity, Electrical conductors and insulators, Movements of the Earth and Planets and Systems for looking into space		
Q4: Systems to solve problems		
Q5: Electric circuits		
Total: 25	Total: 18	Total: 7

SECTION A

QUESTION 1

MULTIPLE-CHOICE QUESTIONS

Draw a **circle** around the letter of the correct answer.

1.1 Parts of electric circuits are called ...

- A appliances.
- B circuit diagram.
- C copper wire.
- D components.

(1)

1.2 Name the device that converts electrical energy into movement energy.

- A Bulb
- B Motor
- C Buzzer
- D Battery

(1)

1.3 Which of the following materials is a good conductor of electricity?

- A Copper wire
- B Wood
- C Plastic
- D Rubber

(1)

1.4 Planets travel around the sun in a path called a / an...

- A asteroid belt.
- B solar system.
- C orbit.
- D rotation.

(1)

1.5 Name the rocky space object/s that orbit/s the sun in the zone between Mars and Jupiter.

- A Meteoroids
- B Comets
- C Moon
- D Asteroids

(1)

(5)

QUESTION 2

MATCHING ITEMS

Match the statements in Column A with the correct word in Column B. Write the correct **LETTER** in Column C next to the number.

Example: 2.6 The flow of electricity _____ . 2.6 **G (Current)**

COLUMN A		COLUMN B	COLUMN C
2.1	Materials that allow electricity to flow through them	A Atmosphere	2.1
2.2	Electricity produced from running water	B Renewable	2.2
2.3	Energy source that cannot be used up or replaced	C Hydro-electric power	2.3
2.4	The layer of gas around a planet	D Rotation	2.4
2.5	The movement of an object in space around its own axis	E Conductors	2.5
		F Non-Renewable	

(5)

QUESTION 3: ONE WORD ANSWERS

Give the correct term for each of the following statements.

Statements		Answers
3.1	A machine that changes the energy of a moving turbine into electricity	
3.2	Circuit with a broken pathway	
3.3	One complete orbit of the Earth around the sun	
3.4	An instrument that allows people to look into space to gather information	
3.5	Scientists who study space and objects in outer space	

(5)

QUESTION 4

NAMING QUESTIONS

Study the appliance below and answer the questions that follow.



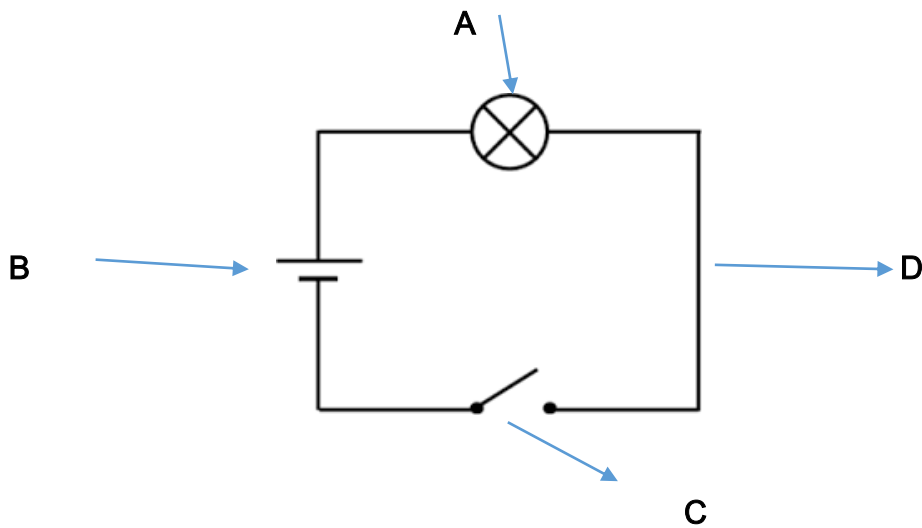
Questions	Answers
4.1 Name of the appliance (1)	
4.2 From where does the input energy come? (1)	
4.3 Name the output device (1)	
4.4 Name the output energy (1)	
4.5 What is the controlling device for the appliance? (1)	
4.6 For what do we use the appliance? (1)	

(6)

QUESTION 5

LABELLING STRUCTURES

Study the circuit diagram below and label components **A**, **B**, **C** and **D**.



- 5.1 Component A: _____ (1)
 - 5.2 Component B: _____ (1)
 - 5.3 Component C: _____ (1)
 - 5.4 Component D: _____ (1)
- (4)**

SECTION A: 25

SECTION B

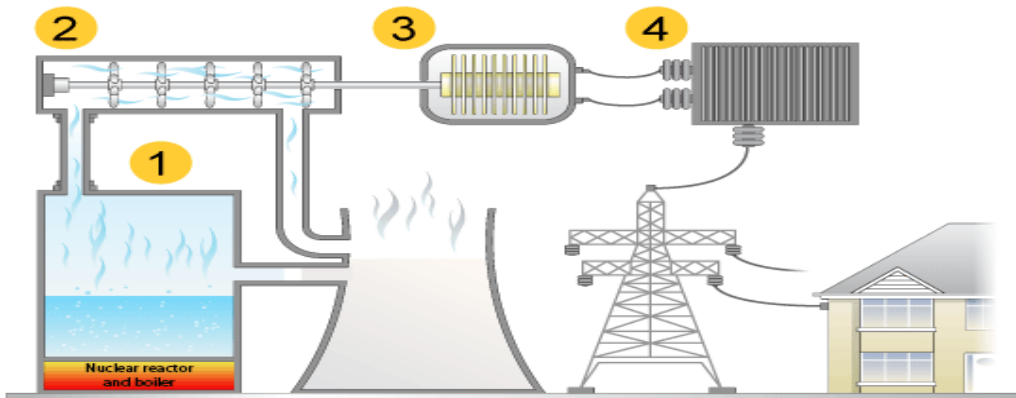
QUESTION 6

UNDERSTANDING AND APPLYING SCIENCE AND TECHNOLOGY

6.1 Explain why we experience day and night on Earth.

(2)

6.2 Study the steps on how electricity is made in the power station and then rearrange the table in the correct order by writing only letters next to the correct step.



Arrange the steps in the correct order, e.g. Step 7 = G

Steps not in the right order	Steps in the right order (USE LETTERS ONLY)
A Steam turns the turbines.	Step 1:
B Electricity travels along power lines over long distances, to homes and other places.	Step 2:
C Transformers change the voltage.	Step 3:
D Coal burns and heats the water in a boiler.	Step 4:
E Turbines turn a generator, which makes electricity.	Step 5:
F The hot water turns into steam.	Step 6:

(6)

- 6.3 Draw a diagram showing the Moon, Earth and the Sun. Draw arrows to show the movements of the Moon and the Earth. Label the diagram correctly. (4)



QUESTION 7

COMPARING THE DIFFERENCES BETWEEN THE EARTH AND THE MOON

Bodies in the solar system	The BODY around which it revolves	How long does it take to complete one ROTATION?	How long does it take to complete one REVOLUTION?
EARTH	7.1 Earth revolves around the _____ (1)	7.3 _____ hours (1)	7.5 _____ days (1)
MOON	7.2 Moon revolves around the _____ (1)	7.4 _____ days (1)	7.6 _____ month (1)

(6)

SECTION B: 18

SECTION C

QUESTION 8

EVALUATING AND ANALYSING

8.1 Give ONE reason why earth is the right planet for living things.

_____ (1)

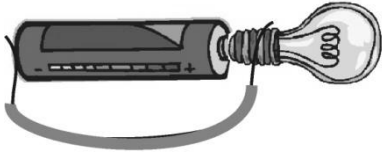
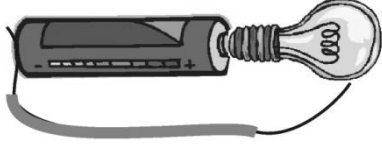
8.2 Suggest ONE way of saving energy when using an electric geyser.

_____ (1)

8.3 Why do electricians use rubber gloves?

_____ (1)

8.4 Analyse the electric circuits below and answer the questions that follow. (4)

Diagram	Lights up (yes/no)	Reason why it lights up or does not light up
		
		

SECTION C: 7

TOTAL: 50