



**GAUTENG PROVINCE**  
EDUCATION  
REPUBLIC OF SOUTH AFRICA

**GAUTENG DEPARTMENT OF EDUCATION  
PROVINCIAL EXAMINATION  
NOVEMBER 2017  
GRADE 6**

**NATURAL SCIENCES  
AND TECHNOLOGY**

**MEMORANDUM**

**6 pages**

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<b>TOTAL</b>	<b>50</b>

**GAUTENG DEPARTMENT OF EDUCATION  
PROVINCIAL EXAMINATION****NATURAL SCIENCES AND TECHNOLOGY****MEMORANDUM****SECTION A****TOTAL: 25 MARKS****QUESTION 1**

- |     |   |            |
|-----|---|------------|
| 1.1 | D | (1)        |
| 1.2 | B | (1)        |
| 1.3 | A | (1)        |
| 1.4 | C | (1)        |
| 1.5 | D | (1)        |
|     |   | <b>(5)</b> |

**QUESTION 2**

- |     |   |            |
|-----|---|------------|
| 2.1 | E | (1)        |
| 2.2 | C | (1)        |
| 2.3 | F | (1)        |
| 2.4 | A | (1)        |
| 2.5 | D | (1)        |
|     |   | <b>(5)</b> |

**QUESTION 3**

- |     |                       |            |
|-----|-----------------------|------------|
| 3.1 | Generator             | (1)        |
| 3.2 | Open / broken circuit | (1)        |
| 3.3 | Revolution            | (1)        |
| 3.4 | Telescope             | (1)        |
| 3.5 | Astronomers           | (1)        |
|     |                       | <b>(5)</b> |

**QUESTION 4**

- |     |  |            |
|-----|--|------------|
| 4.1 | Torch  | (1)        |
| 4.2 | Battery  | (1)        |
| 4.3 | Bulb   | (1)        |
| 4.4 | Light and Heat energy  | (1)        |
| 4.5 | Switch   | (1)        |
| 4.6 | To produce light / To switch on/off / To break or complete the circuit pathway | (1)        |
|     |  | <b>(6)</b> |

**QUESTION 5**

- |     |                           |            |
|-----|---------------------------|------------|
| 5.1 | Bulb                      | (1)        |
| 5.2 | Cell                      | (1)        |
| 5.3 | Switch / Switch open / on | (1)        |
| 5.4 | Wire / Conductor          | (1)        |
|     |                           | <b>(4)</b> |

**SECTION A: 25**

**SECTION B****QUESTION 6**

6.1 Why we experience day and night on Earth?

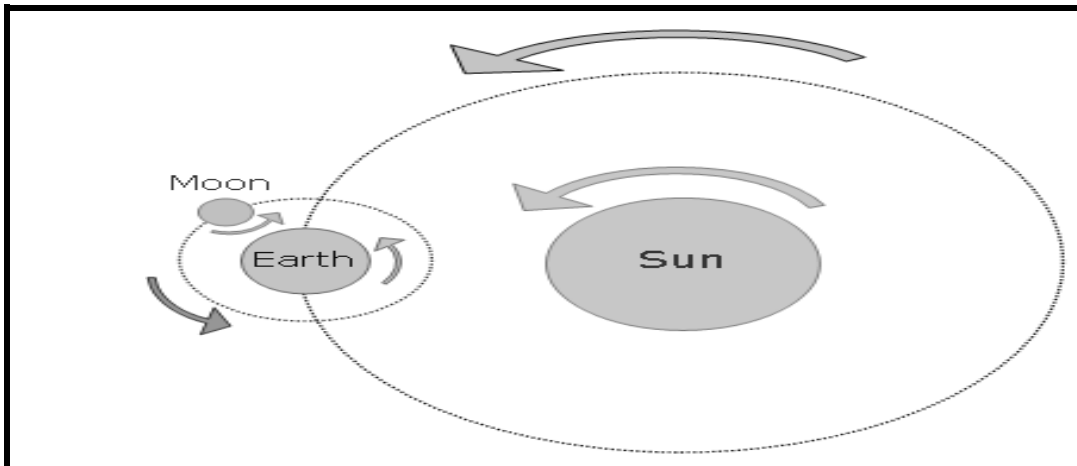
- During Rotation, the side of the Earth facing the Sun experiences daytime, and the opposite side of the Earth experiences night time.
- During Rotation the part of the Earth facing the sun is in daylight, and the part of the Earth facing away from the Sun is in darkness, and it is night there. (2)

6.2 **How electricity is made in a power station**

Step 1: D – Coal burns and heats the water in a boiler	(1)
Step 2: F – The hot water turns into steam.	(1)
Step 3: A – Steam turns the turbines.	(1)
Step 4: E – Turbines turn a generator, which makes electricity.	(1)
Step 5: C – Transformers change the voltage.	(1)
Step 6: B – Electricity travels along power lines over long distances to homes and other places.	(1)

**(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)

- 2 marks for the arrows that show the **Moon** orbiting the **Earth**
- 2 marks for the arrows that show the **Earth** orbiting the **Sun**
- The size of the **Moon** should be smaller than the size of the **Earth** and the size of the **Earth** should be smaller than the size of the **Sun**.

## QUESTION 7

EARTH			MOON		
7.1	Sun	(1)	7.2	Earth	(1)
7.3	24 Hours	(1)	7.4	28 days	(1)
7.5	365 ¼ days	(1)	7.6	One (1) month	(1)

(6)

SECTION B: 18

## SECTION C

## QUESTION 8

8.1 Why the Earth is the right planet for living things (1)

- Earth has an Atmosphere which protects the Earth from harmful sunrays.
- Earth has oxygen for respiration.
- Earth has the right temperature.
- Earth has all necessary requirements to sustain life such as water, energy, gases (Oxygen, Nitrogen and Carbon dioxide), soil and the right temperature.

**Allocate one (1) mark for any answer provided above**

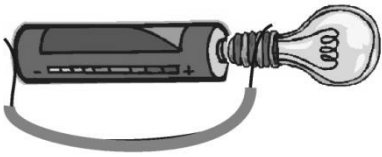
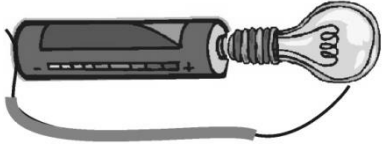
8.2 Ways of saving energy when using an electric geyser (1)

- Switch off the geyser after bathing / when you leave your house.
- Use a shower instead of the bath.
- Do not let the hot tap drip / Close dripping tap from geyser.
- Cover the geyser with black / silver cloth.

**Allocate one (1) mark for any answer provided above**

8.3 To protect them from being electrocuted. (1)

8.4 Analysing the electric circuits

Diagram	Lights up (yes / no)	Reason why it lights up or does not light up
	Yes	A complete circuit Flow of current through bulb into the circuit
	No	One part of the wire is connected to glass. Glass is not a conductor of electricity. No current is passing through the bulb

(4)

**SECTION C: 7**

**TOTAL: 50**