



Province of the
EASTERN CAPE
EDUCATION

INTERMEDIATE PHASE

GRADE 6

NOVEMBER 2016

**NATURAL SCIENCES AND TECHNOLOGY
MEMORANDUM**

MARKS: 80

This memorandum consists of 6 pages.

SECTION A**QUESTION 1**

- 1.1 C ✓ electric circuit.
- 1.2 C ✓ copper conducts electricity easily.
- 1.3 B ✓ Alarms
- 1.4 C ✓ an asteroid.
- 1.5 C ✓ 365¼ days. (5 x 1) **[5]**

QUESTION 2

- 2.1 B ✓ Fossil fuel
- 2.2 E ✓ Moon
- 2.3 F ✓ Telescope
- 2.4 G ✓ Battery
- 2.5 D ✓ Space Rover (5 x 1) **[5]**

QUESTION 3

- 3.1 Components ✓
- 3.2 Symbols ✓
- 3.3 Turbine ✓
- 3.4 Generator ✓
- 3.5 Mercury ✓ (5 x 1) **[5]**

TOTAL SECTION A: 15

SECTION B**QUESTION 4**

- 4.1 Switch ✓ (1)
- 4.2 Conductor ✓ (1)
- 4.3 Hydroelectric power ✓ (1)
- 4.4 Pylon ✓ (1)
- 4.5 Rotation ✓ (1)
- [5]**

QUESTION 5

- 5.1 Three ✓ (1)
- 5.2 To provide the input energy. ✓ (1)
- 5.3 Yes ✓ (1)
- 5.4 Light bulb. ✓ (1)
- 5.5 No ✓
The switch is open. ✓✓ (3)
- 5.6 • They know what components they need for a circuit. ✓
• They know how the components are arranged in the circuit. ✓
(Any one or any other relevant answer is accepted) (2)
- [9]**

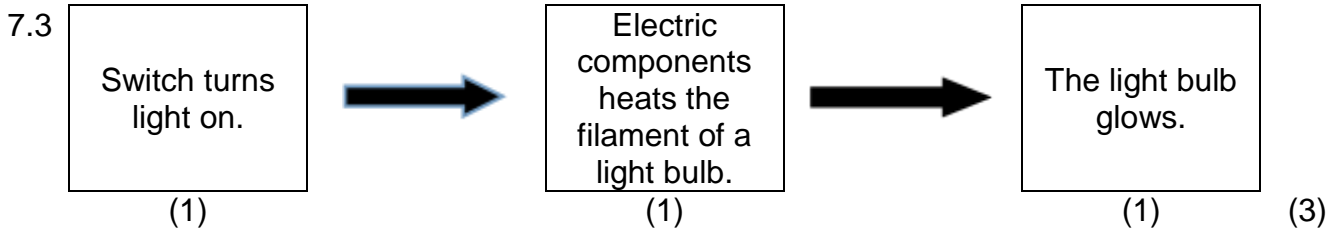
QUESTION 6

- 6.1 Conductors: Coins ✓ Cold drink can ✓ Knife ✓ (Any 2 x 1)(2)
Insulator: Pencil ✓ Mug/Glass ✓ Eraser ✓ (Any 2 x 1)(2) (4)
- 6.2 The conductors are made from metal. ✓
The insulators are made from non-metals. ✓ (2)
- 6.3 The glass of the light bulb is an insulator. ✓ (1)
- [7]**

QUESTION 7

- 7.1 **Input:** Switch turns the TV set on. ✓
Process: Electric component makes the screen work. ✓
Output: Images appears on the screen. ✓ (3)

- 7.2 Electric toy car ✓ Electric gates ✓ Fan ✓ (Any 1 x 1) (1)



- 7.4  (1)

- 7.5
- The switch was open. ✓
 - The components were not firmly connected. ✓
 - The batteries were flat. ✓
 - The buzzer was not working. ✓
- (Any other relevant answer is accepted)** (2)
[10]

QUESTION 8

- 8.1 Switch off light when not in use. ✓
 Switch off geysers when we don't need hot water. ✓
(Learner's answers may differ) (2)

- 8.2 8.2.1 Renewable energy sources are won't be used up. ✓ (1)

- 8.2.2 Non-renewable energy sources mean once we have used them up they are gone forever. ✓ (1)

8.3 8.3.1

TYPE OF APPLIANCE	WATTAGES	
Lamp	70 W	(1)
Radio	14 W	(1)
Iron	600 W	(1)
Hairdryer	550 W	(1)

Mention 4 (4 x 1) (4)

- 8.3.2 Different appliances consumes different amounts of energy.
(Learner's responses may differ) (2)

- 8.3.3 It can cause a fire. ✓
 It electrocutes/kills people. ✓
(Any relevant answer is acceptable.) (2)
[12]

QUESTION 9

9.1 Gas giants are:

- Much bigger ✓
- Further away from the sun ✓
- Made of gas, not rock ✓

(3)

9.2 9.2.1 One side of the earth is dark ✓
(Any relevant answer regarding the diagram is acceptable.)

(1)

9.2.2 No sunlight falls on it. ✓

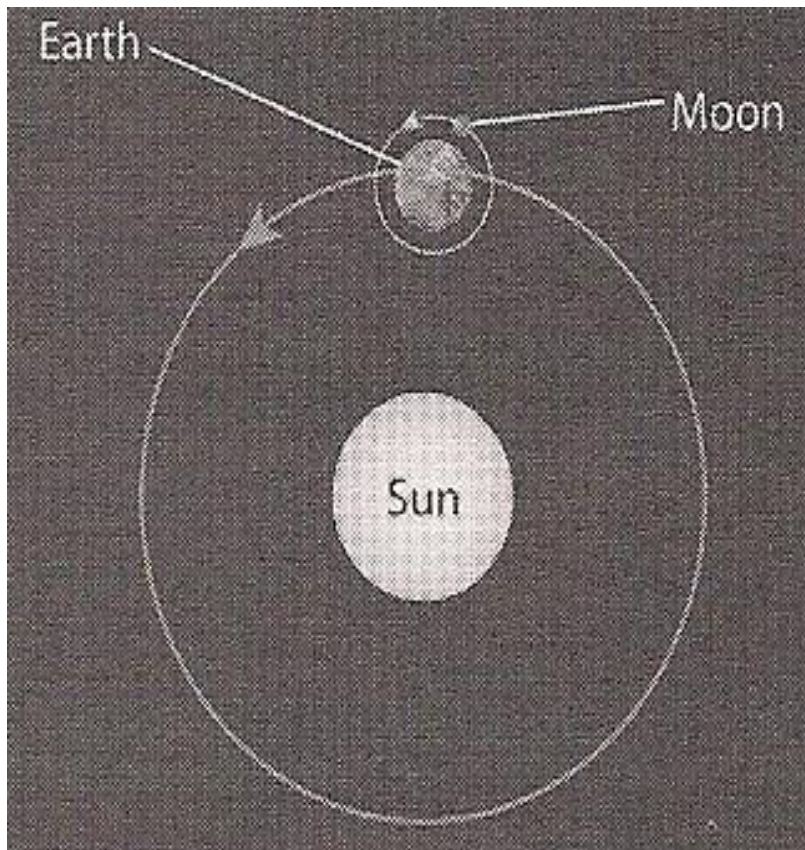
(1)

9.2.3 India is the dark part, it is night there ✓✓

(2)

[7]

QUESTION 10



MARKS ALLOCATED AS FOLLOWS:

- Sun and label
- Earth and label
- Moon and label
- Earth's orbit with direction arrow
- Moon's orbit with direction arrows
- Neatness

(1)

(1)

(1)

(1)

(1)

(1)

[6]

QUESTION 11

- 11.1 SKA Square Kilometer Array ✓
 KAT Karoo Array Telescope ✓
 SALT Southern African Large Telescope ✓ (3)
- 11.2 This site was chosen for its dark and clear skies and good weather conditions. ✓✓ (1)
[4]

QUESTION 12

- 12.1
- Wheels made of wire mesh. ✓
 - Electric motor to drive each wheel. ✓
 - Cameras to take photographs. ✓
 - Solar panels to recharge batteries. ✓
 - Mechanical arm to pick up samples. ✓
- (Any two answers are accepted)** (Any 2 x 1) (2)
- 12.2 12.2.1 Moon rovers and Mars rovers are similar because ...
- They have wheels and axles. ✓
 - Their wheels turns in all directions. ✓
 - They are powered by solar panels and batteries. ✓
 - They are vehicles. ✓
- (Any 2 x 1) (2)
- 12.2.2 Moon rovers and Mars rovers are different because ...
- Moon Rovers travel on the surface of the moon. Mars Rovers travel on the surface of the Mars. ✓
 - Moon Rovers are usually driven by human astronauts. Mars Rovers are controlled by robots. ✓
- (Any one answer is accepted)** (1)
[5]

TOTAL SECTION B: 65
GRAND TOTAL: 80