Education and Sport Development
Department of Education and Sport Development
Departement van Onderwys en Sportontwikkeling
Lefapha la Thuto le Tlhabololo ya Metshameko
NORTH WEST PROVINCE

NORTH WEST PROVINCIAL ASSESSMENT

GRADE 6

NATURAL SCIENCES AND TECHNOLOGY

NOVEMBER 2018

MARKS: 80
TIME: 2 hours

LEARNER: _____

SCHOOL: _____

SUB DISTRICT OFFICE: _____

DISTRICT: _____

80

This question paper consists of 12 pages.

Instructions and information.

1. This question paper consists of THREE Sections. A, B and C
2. Answer ALL questions in EACH Section.
3. Write ALL your answers in spaces provided.
4. Write neatly and legibly.

SECTION A

QUESTION 1

1.1 Four possible answers are given below. Circle ONLY the letter of the correct answer in this question paper. Example

1.6

1.1.1 In an electric circuit below, an electric cell is represented by the symbol… (1)

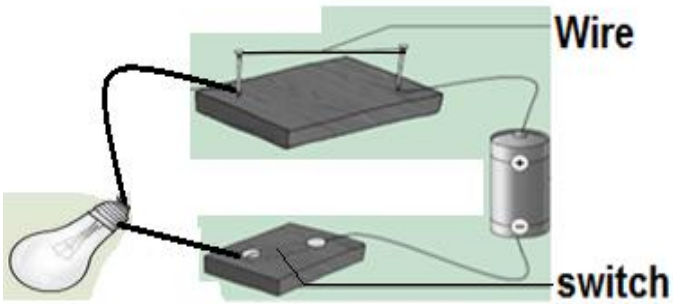
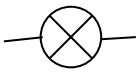
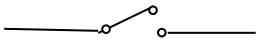
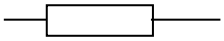


Figure 1

A 

B 

C 

D 

1.1.2 An example of poor conductor of electric current is … (1)

A Aluminium.
B Silver.
C Gold.
D Wood.

1.1.3 Figure 2 shows a renewable energy source associated with... (1)

Figure 2

A sunlight
B wind
C nuclear
D plants

1.1.4 When a torch is switched on, energy in a torch battery is mainly changed from… (1)

A chemical energy to heat energy
B chemical energy to sound energy
C electrical energy to movement energy
D electrical energy to light energy

1.1.5 In our solar system, the inner planets are… (1)

A Mercury, Venus, Earth, Mars
B Jupiter, Venus, Neptune, Pluto.
C Venus, Earth, Saturn, Neptune.
D Mercury, Earth, Saturn, Uranus.

1.1.6 What is the biggest advantage of operating a telescope in space? (1)

A Objects in space are so much closer.
B You can study objects in space all the time, not only at night.
C It is easier to operate a telescope in space.
D You don’t have to look through the Earth’s atmosphere.

1.1.7 Figure 3 below best represents… (1)

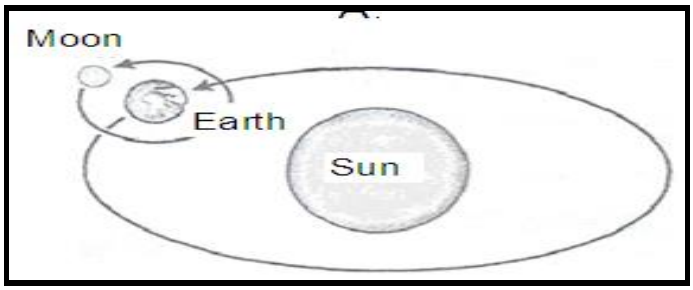


Figure 3

A earth's revolution.
B rotation of the earth.
C revolution of the moon.
D revolution of the moon and the earth.

1.1.8 In the absence of…, the Moon will not shine light on earth anymore. (1)

A sun
B mars
C asteroids
D rainfall

1.1.9 Revolution of the moon causes… (1)

A day and night on earth.
B one year period on earth.
C one month period on earth.
D different seasons on earth.

1.1.10 Which ONE of the following statements is TRUE about the earth, moon and the sun? (1)

A The earth rotates around the sun.
B The sun revolves around the moon on its own orbit.
C The moon revolves around the sun while moving around the earth, and does not revolve around the sun in its own orbit.
D The earth's oval shaped orbit around the sun causes seasonal Changes.

[10]

1.2 Write down the correct term for each of the following statements:

1.2.1 Spinning of the moon on its axis._____ (1)

1.2.2 An instrument used to observe objects in space._____ (1)

1.2.3 The closest planet to the sun._____ (1)

1.2.4 Group of large rocks found between inner and outer planets. _____ (1)

1.2.5 A dwarf planet previously classified as planet._____ (1)

[5]

1.3 Match the correct word in Column A with the most relevant statement in Column C.

Write down only the letter of the correct statement in space provided in Column B.

COLUMN A	COLUMN B	COLUMN C
1.3.1 Battery		A Transforms electric energy into movement energy.
1.3.2 An electric fan		B A complete unbroken pathway for electricity.
1.3.3 A switch		C Materials that do not allow heat or electricity to pass through.
1.3.4 Insulators		D A device for making or breaking a connection in a circuit.
1.3.5 Electric circuit		E The remains of dead plants and animals that stored energy from the sun millions of years.
		F Combination of two or more cells.

[5]

TOTAL SECTION A: 20

SECTION B

QUESTION 2

Figure 4 shows a simple electric circuit consisting of 1 cell, 1 bulb; switch **P** and conducting copper wires. Switch P is closed and is made from paper clip.

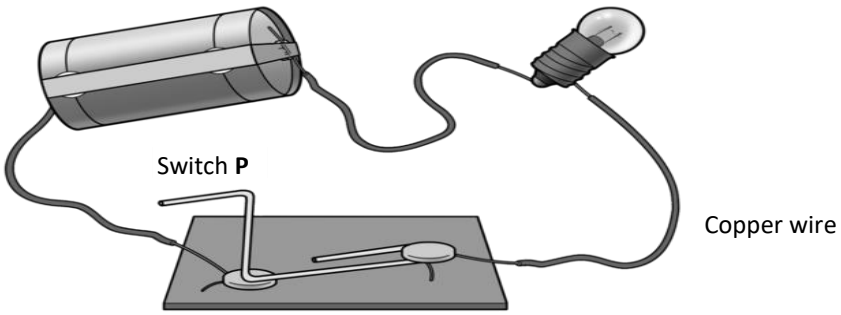


Figure 4

2.1 If switch **P** is opened, what will happen to the brightness of the bulb? (INCREASE; DECREASE TO ZERO; REMAIN THE SAME) (2)

_____

2.2 If copper wires in FIGURE 4 are replaced with a wool material, how will the whole circuit be affected? (2)

_____

_____

_____

2.3 Draw a labelled **electric circuit diagram** of FIGURE 4 in the space provided below. Use the correct circuit symbols. (9)

[13]

QUESTION 3

A grade 6 learner conducted an investigation about energy consumption in a particular municipality. The two electrical appliances, *light bulb (old type)* and *electric kettle* were considered in this investigation. The results of the investigation are recorded in the table as follows:

Electrical appliance	Power in W or kW	Time used	Cost per unit of electricity
Light bulb (old type)	100 W	2 hours	12 cents/kWh
Electric kettle	2 kW	2 hours	12 cents/kWh

3.1.1 The abbreviation kW stands for… (2)

_____

3.1.2 Which electrical appliance have the highest power requirements? (2)

_____

_____

3.1.3 Which of the TWO electrical appliances will use the most electricity when used for 2 hours? (2)

_____

3.1.4 Give a reason for your answer given in 3.1.3 above (2)

_____

_____

3.1.5 Name TWO ways of preventing wastage of electricity in your home. (4)

_____

_____

_____

_____

3.2 Illegal electricity connections affect you

CASE STUDY ON ILLEGAL ELECTRICITY CONNECTIONS

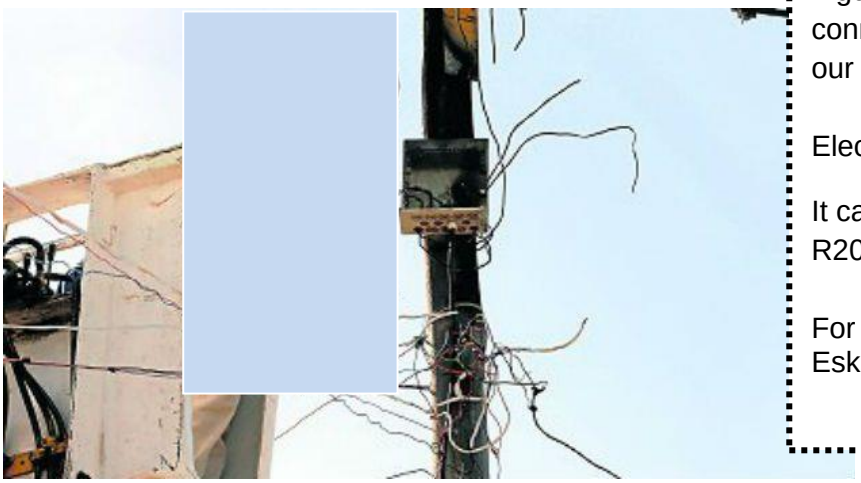


Figure 5 shows part of electricity connections in some areas next to our homes.

Electricity theft is a huge problem.

It causes the country about R20 billion a year.

For any illegal connections, the Eskom report line is 08600 37566

Figure 5

Adopted from: *The Citizen, 2018*

3.2.1 Which statement in the above case study refers to "illegal connections of electricity"? (2)

_____

_____

3.2.2 Write down TWO reasons why you think illegal connections affect people badly. (4)

_____

_____

_____

3.3 Study FIGURE 6A and 6B below and answer questions that follow.

FIGURE 6A: Solar panels on a roof top of a building	**FIGURE 6B:** Coal from underground mine
	

3.3.1 What is meant by a renewable source of energy (2)

_____

_____

3.3.2 Which Figure (6 A or 6B) represents renewable energy source? (2)

_____

3.3.3 Write down TWO disadvantages of using coal to generate heat or electricity. (2)

_____

_____

[24]

TOTAL SECTION B: 37

SECTION C

QUESTION 4

4.1 Read the following paragraph about the solar system and answer questions that follow.

The Sun is by far the largest and most massive object in our solar system, making up 98% of the total mass of the solar system. Due to the Sun's massive size, its large gravitational pull causes the planets and other objects in the solar system to orbit around it. In orbit around the Sun are the eight planets along with their moons, dwarf planets and many much smaller objects like asteroids.

4.1.1 Name the FOUR inner planets of the solar system. (4)

_____

_____

_____

_____

4.1.2 Name the force which keep planets and other objects to move around the sun? (2)

_____

4.1.3 It takes Mercury 88 days to revolve around the sun. How long does it take Earth to revolve around the sun in days? (2)

_____

4.1.4 How many moons do the planet earth have? (2)

_____

4.1.5 A small rocky object orbiting the Sun is called…. (2)

_____

4.1.6 The second closest planet to the Sun is… (2)

_____

[14]

4.2 Study the extract and Figure 5 below and answer questions that follow.

Mars and the Search for Life

The planet Mars has been visited many times by robotic landers. The first lander, NASA's Viking 1, landed on Mars in 1976, It took the first close-up pictures of the Martian surface but found no evidence of life. The latest lander currently exploring Mars is NASA's Mars Science Laboratory mission, with its rover named Curiosity. Curiosity landed on Mars in August 2012 and is busy investigating the planet's rocks near a giant crater called the Gale crater. One of the main aims of the Mars Science Laboratory is to determine whether Mars ever had an environment capable of supporting life.

Figure 5: The Curiosity rover.

4.2.1 In which year did the rover "Curiosity" land on Mars? (1)

_____

4.2.2 State TWO reasons why scientists are interested in investigating Mars? (4)

_____

_____

4.3 TELESCOPES

The objects we see in the sky are very far away and telescopes can be used to see and measure how far away they are. The SKA in Ghana, Kenya, South Africa and Mozambique has many dishes. It is a different kind of telescope for looking at the stars. Stars send out energy in light but also in radio waves. The SKA will receive radio waves that our eyes cannot see.

4.3.1 What does a telescope do? (2)

_____

_____

4.3.2 The acronym SKA stands for … (2)

_____

[23]

TOTAL SECTION C: 23
GRAND TOTAL: 80