



**TOM NEWBY SCHOOL
TERM 4 FORMAL ASSESSMENT**



Subject	NSTech	Examiner	Mrs P Singh
Date	November 2022	Total marks	60
Grade	6	Time allocation	1 hour
		Moderator	Mrs M Fourie
Special instructions/Equipment:			
1. Read all questions carefully before answering. 2. Check the mark allocation. 3. Write neatly and legibly.			
This assessment has been compiled using notes and information contained in the Tom Newby School resource material. The marking memorandum has been compiled accordingly. While alternative responses will be given due acknowledgement, the official memorandum will be considered a priority document to ensure uniformity of marking.			

Name:	Surname:	Grade:
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SECTION A – ENERGY AND CHANGE [36]

Question 1: Electric Circuits (5)

State whether the following statements are **True** or **False**. If **False**, correct the statement.

1.1 Particles with the same charge attract each other.

_____ (1)

1.2 Electric charges come from an energy source such as a battery

_____ (1)

1.3 The role of a circuit is to send electricity from the device to the source.

_____ (1)

1.4 Output energy can only be heat.

_____ (1)

1.5 Most systems use wires as the conducting material.

_____ (1)

Question 2: Circuits (5)**Fill in the missing words.**

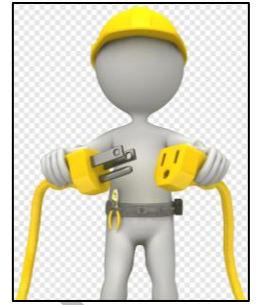
- 2.1 _____ use simple diagrams to show electrical circuits. (1)
- 2.2 Instead of drawing an actual bulb or cell on a diagram, we use _____ (1)
- 2.3 When something is covered in a protective substance such as plastic we say that it is _____ (1)
- 2.4 We use _____ to show the direction of electricity flow. (1)
- 2.5 Hairdryers change _____ energy into heat energy. (1)

Question 3: Conductors and Insulators (5)**Multiple Choice: Highlight/Underline the most correct answer.**

- 3.1 Which of the following items conduct electricity but are very expensive.
- aluminium and copper
 - gold and silver
 - aluminium and gold
 - copper and silver
- 3.2 Insulators are used to protect us from ...
- getting an electric shock
 - getting wet
 - getting wired
 - getting copper
- 3.3 Where would you find a porcelain spark plug?
- on a bicycle
 - in a telephone
 - in a stove
 - in a car's engine
- 3.4 In an electric circuit, copper wires are normally used as ...
- converters
 - output devices
 - conductors
 - sources of energy

3.5 Materials that do not allow electricity to pass through are called ...

- a. conductors
- b. insulators
- c. plastic
- d. wire



Question 4: Systems to solve problems (6)

The following appliances produce useful energy to solve problems.

For each of the following appliances, state

- a) what useful form of energy is produced
- b) what problem the system solves

4.1 Drone

a) Useful form of energy: _____ (1)

b) Problem that is solved: _____ (1)



4.2 Microwave Oven

a) Useful form of energy: _____ (1)

b) Problem that is solved: _____ (1)



4.3 Cell phone

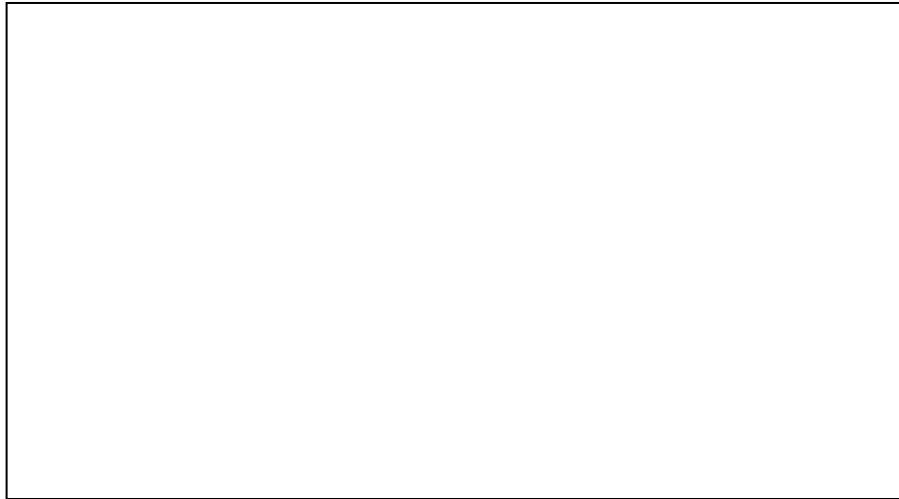
a) Useful form of energy: _____ (1)

b) Problem that is solved: _____ (1)



Question 5: Circuit symbols (5)

Draw and label an electric circuit using symbols. Use the block provided below. Your diagram must have 2 cells, 2 light bulbs, copper wire and an open switch connected in series.

**Question 6: Mains electricity (10)**

Read through the questions carefully and then answer.

6.1 Why is electricity very costly?

(1)

6.2 What makes compact fluorescent light bulbs better for use than normal light bulbs?

(2)

6.3 Explain in detail how a wind turbine generates electricity.

(3)

6.4 Why do farmers use wind turbines?

_____ (1)

6.5 What is an illegal connection?

_____ (1)

6.6 Provide another name for illegal connections.

_____ (1)

6.7 Name 1 disadvantage of using fossil fuels to produce electricity.

_____ (1)

SECTION B – EARTH AND BEYOND [24]

Question 7: The Sun and Planets (5)

Match the word/phrase in Column B with the word in Column A. Write only the correct letter in the space provided.

Column A	Column B
7.1 Sun	A. covered by soil and water
7.2 Mercury	B. the Red planet
7.3 Mars	C. bare rocky surface with many volcanoes
7.4 Earth	D. at the centre of the solar system.
7.5 Venus	E. has large circular holes called craters.

7.1 _____	7.2 _____	7.3 _____	7.4 _____	7.5 _____
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Question 8: Planets (5)

Use the words in the word box to complete the sentences.

asteroid belt	streaky	hydrogen	13 moons	methane
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8.1 Saturn is a gas planet made of helium and _____.

8.2 _____ gives Uranus its green- blue appearance.

8.3 Neptune has _____.

8.4 Fast winds blowing around the Jupiter give it a _____ appearance.

8.5 Pioneer 10 had to go through an _____ to reach Jupiter.

Question 9: Movement of the Moon (4)

Circle or highlight the most correct option from those provided in each statement.

9.1 Day and night is caused by the **revolution/rotation of the Earth.** (1)

9.2 One rotation of the Earth takes **24 hours/29½ hours.** (1)

9.3 There is **day/night** on the side of the Earth that is facing toward the Sun. (1)

9.4 The Moon revolves around the Earth once in **24 days/28 days.** (1)

Question 10: Systems to explore (10)

Study the picture of the footprints and then answer the questions that follow.



10.1 Where was this picture taken?
_____ (1)

10.2 Who were the first two people to walk on this surface?
_____ (2)

10.3 In which year did this happen?
_____ (1)

10.4 What nationality were the two people?
_____ (1)

10.5 Why do you think these footprints are still there even though these people landed there many years ago?

(2)

10.6 What is the name given to the vehicle that is used to explore this surface?

(1)

10.7 If you were given the opportunity to visit any planet, which one would you choose and why?

(2)

TOTAL: 60

TOM NEWBY SCHOOL

Grade 6 Natural Science & Technology

TERM 4 FORMAL ASSESSMENT

Performance Analysis

(For teacher's use only)

Name of learner: _____ Grade 6: _____

SECTION A: 36 marks

Question Number	1	2	3	4	5	6	Total
Possible Mark	5	5	5	6	5	10	36
Learner's Mark							
Moderator's Mark							

SECTION B: 24 marks

Question Number	7	8	9	10	Total
Possible Mark	5	5	4	10	24
Learner's Mark					
Moderator's Mark					