



Wordsworth High School

Natural Sciences Grade 8

Test 3

Examiner : Ms K. Mpofu

Time : 1 Hour

Marks : 60

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Number the answers according to the numbering system used in this question paper. Numbers must be AGAINST the margin and NOT in the middle of the page.
3. Rule off after each complete question.
4. Draw diagrams and flow charts ONLY when requested to do so.
5. All drawings should be done in pencil and labelled in blue ink.
6. A non-programmable scientific calculator may be used.
7. Write neatly and legibly.

SECTION A:

Question 1: Multiple choice, Terminology and Matching columns.

1.1 Various options are provided as possible answers to the following questions.

Choose the correct answer, and write only the letter next to the question number in the ANSWER BOOK, for example 1. 6 D

1. 1.1 A simple device that opens and closes a circuit is known as a / an _____.

- A. Cell
- B. Ammeter
- C. Switch
- D. Resistor

1. 1.2 A natural form of static electricity is _____.

- A. Thunder
- B. Lightning
- C. Friction
- D. Cyclone

1. 1.3 The colour spectrum consists of _____ colours.

- A. Seven
- B. Five
- C. Eight
- D. Six

1. 1.4 In a parallel circuit _____.

- A. Current is the same everywhere.
- B. Current stops flowing if one bulb fuses.
- C. There is only one pathway for current to flow through.
- D. There is more than one pathway for current to flow through.

1. 1.5 Refraction is the _____ light.

- A. Increasing
- B. Decreasing
- C. Straightening
- D. Bending

(2 x 5) (10)

1.2 Give the correct term for each of the following descriptions. Write only the term next to the question number, for example 1.2.6 Electricity.

1.2.1 The build-up of an electrical charge on the surface of an object.

1.2.2 A substance that does not allow electric current to flow through it.

1.2.3 A component in an electrical circuit which slows down the movement of electric charge.

1.2.4 A drawing showing the pathway of light.

1.2.5 A layer at the back of the eyeball which is made up of light sensitive cells.

(1 x 5) (5)

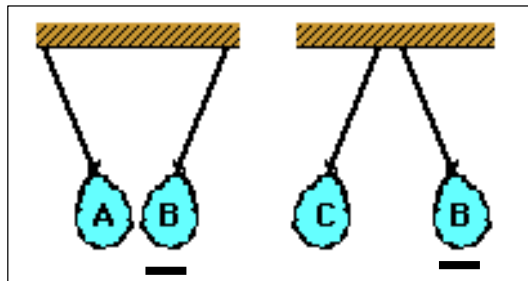
- 1.3 Choose an item in COLUMN B that matches the statement in COLUMN A. Write only the letter next to the question number, for example 1.3.6 K

| COLUMN A | COLUMN B |
|---|-------------------------------------|
| 1.3.1 A negatively charged electrode of an electrolytic cell. | A. Positively charged B. Diverge |
| 1.3.2 A transparent object able to refract and focus light. | C. Opaque D. Cathode |
| 1.3.3 When light rays spread outwards from a point. | E. Converge F. Anode |
| 1.3.4 Objects that do not allow light to pass through. | G. Lens H. Negatively charged |
| 1.3.5 Material that has lost electrons. | I. Translucent |

(1 × 5) (5)

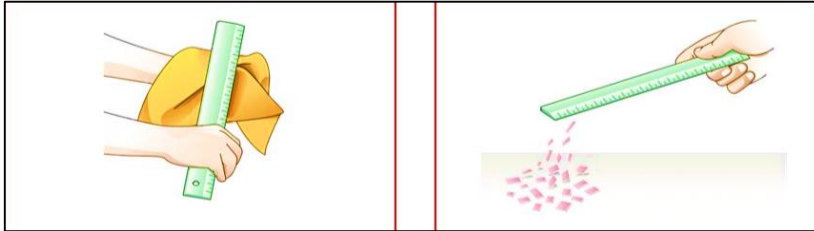
TOTAL QUESTION 1: 20 MARKS**SECTION B:****Question 2: Static electricity, Energy transfer in electrical systems, Components of a circuit, Series and Parallel circuits.**

- 2.1 Study the diagram below and answer the questions that follow.



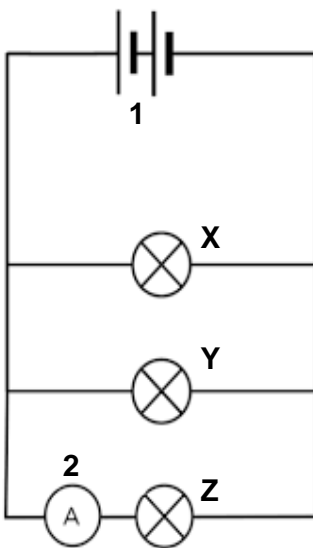
- 2.1.1 Given that **Object B** is **negatively charged**, what is the charge of Object A and Object C? (2)
- 2.1.2 Give reasons for **both** answers in question 2.1.1. (4)

2.2 In the diagram below, a ruler was rubbed with a cloth and then used to pick up pieces of paper as shown.



Fully describe what is happening. (4)

2.3 Study the circuit diagram below and answer the questions that follow.



2.3.1 Name the components labelled **1** and **2**. (2)

2.3.2 State the function of component **2**? (2)

2.3.3 Is the diagram showing a series or parallel circuit? (1)

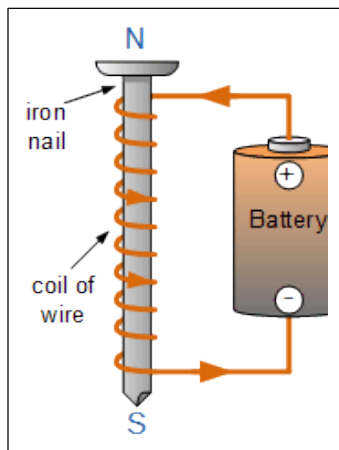
2.3.4 Give one example of where such circuits are used. (1)

2.3.5 Explain what would happen to bulbs **X** and **Z** if bulb **Y** got broken. (2)

2.3.6 How are the Christmas lights usually connected. (1)

2.3.7 What problem might a connection mentioned Question 2.3.6 cause? (1)

2.4 Study the diagram below and answer the questions that follow.



2.4.1 Name the device shown on the side. (1)

2.4.2 Mention two ways of increasing the strength of this device. (2)


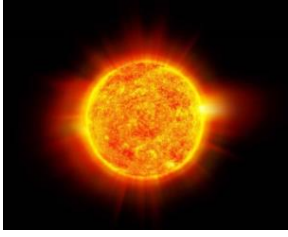


2.4.3 List two objects where the device on the side can be found. (2)

TOTAL QUESTION 2: 25 Marks

SECTION C:

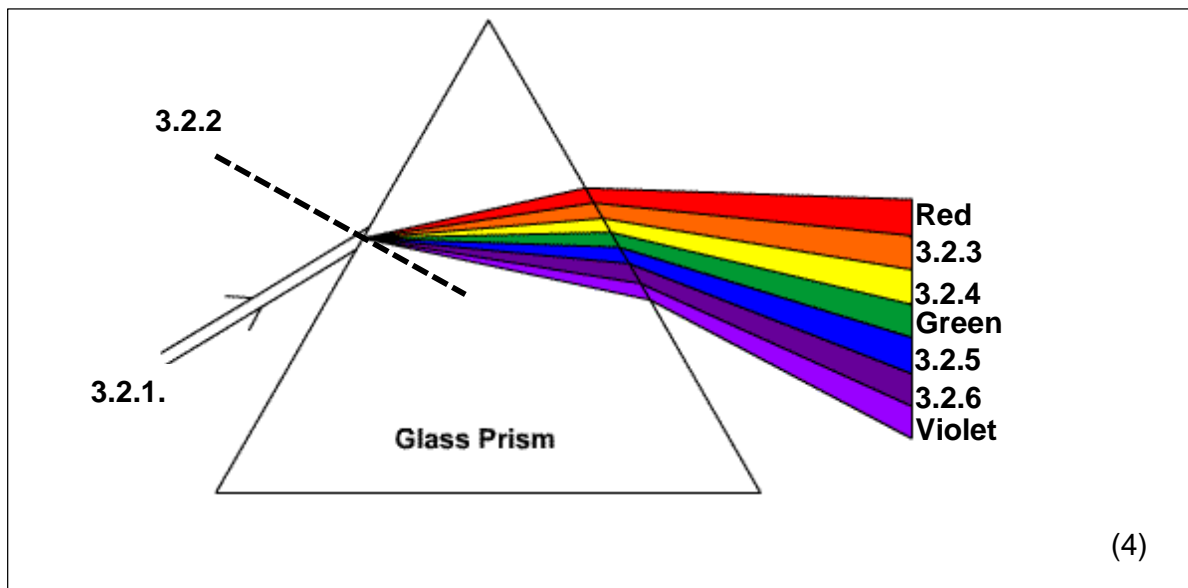
Question 3: Visible Light.

3.1 Classify the following objects as **luminous objects** or **illuminated objects**.

| 3.1.1 | 3.1.2 | 3.1.3 | 3.1.4 |
|---|--|---|---|
| <p style="text-align: center;">Moon</p>  | <p style="text-align: center;">Sun</p>  | <p style="text-align: center;">Candles</p>  | <p style="text-align: center;">Jacket</p>  |

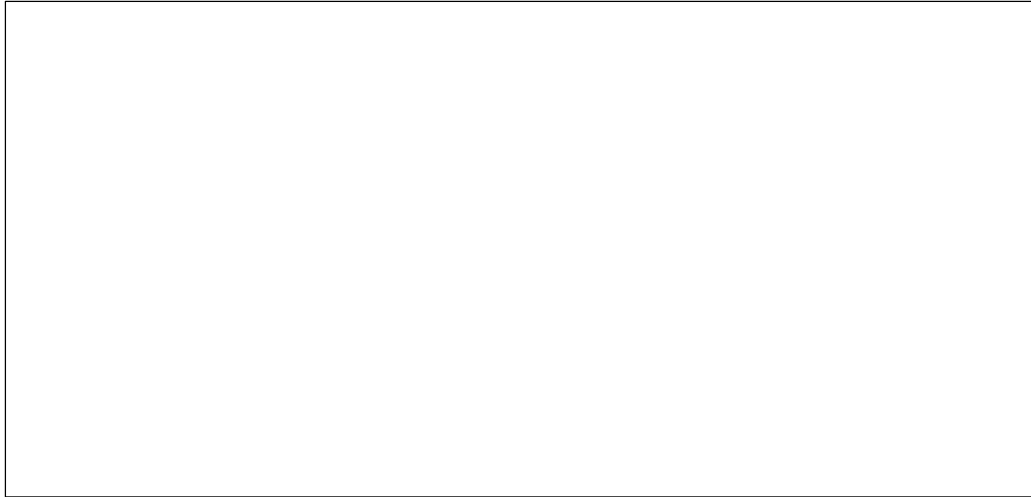
(1 × 4)

3.2 Label the following ray diagram showing how white light is dispersed when it passes through a rectangular prism.



(4)

3.3 Study the diagram below and answer the questions that follow.



- 3.3.1 Name the property of light shown in the picture. (1)
- 3.3.2 State the law of reflection. (2)
- 3.3.3 Explain why the pages of the book appear white. (2)
- 3.3.4 Describe how a shadow is formed. (2)

TOTAL QUESTION 3: 15 MARKS

GRAND TOTAL: 60 MARKS