



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**GENERAL EDUCATION AND
TRAINING**

GRADE 8

**NATURAL SCIENCES
PLC FINAL EXAMINATION
2025**

Time: 1½ Hours

Marks: 60

Instructions and Information

1. You must **answer all the questions**.
2. Read the instructions carefully, and answer questions as instructed.
3. Number your answers exactly as the questions are numbered.
4. Write neatly and legibly.

NB. This question paper consists of **7 pages** and contains **6 questions**.

SECTION A

QUESTION 1

Various options are provided as possible answers to the following questions. Choose the correct answer and only write down the corresponding letter (A-D) next to the question number (1.1 – 1.10), e.g. 1.12 B

1.1 Why is a glass an insulator? Because...

- A It allows electrons to flow through it.
- B It does not allow electrons to flow through it.
- C It allows protons to flow through it.
- D It does not allow protons to flow through it. (1)

1.2 During an electrical storm, you will be safest...

- A In a car.
- B Under a tree.
- C In a dam.
- D On the roof of a house. (1)

1.3 Which statement regarding parallel circuits is TRUE?

- A Current remains constant in parallel circuits.
- B Current divides in parallel circuits.
- C Resistors in parallel reduces current flow.
- D Parallel circuits have only one pathway for current to flow. (1)

1.4 Blue light shines on a green object at night. The colour observed will be...

- A Blue
- B Green
- C Black
- D White (1)

1.5 Which option below best exemplifies the following statement?

Insulators obtain a charge through friction.

- A Current move through a metal wire.
- B Rubbing a plastic ruler causes it to gain electrons.
- C Rubbing a piece of iron creates a positive charge.
- D Metals become magnetic when rubbed with a woolen cloth. (1)

1.6 The formation of shadows proves that light...

- A Changes direction while staying in the same medium.
- B Cannot change direction.
- C Move in straight lines.
- D Disperses into the different colours of the rainbow. (1)

1.7 Which planet has a distinctive red appearance?

- A Mars
- B Jupiter
- C Neptune
- D Venus

(1)

1.8 Light passing Earth at 300 000 km/s reaches Mars 3 minutes later. What is the distance between Earth and Mars? (*Distance = speed x time*)

- A 540 000 000 km
- B 54 000 000 km
- C 900 000 km
- D 9 000 000 km

(1)

1.9 Which of the following is the largest optical telescopes in South Africa?

- A Hubble
- B MeerKAT
- C SKA
- D SALT

(1)

1.10 Which of the following is considered a constellation?

- A Kuiper Belt
- B Southern Cross
- C Milky Way
- D Alpha Centauri

(1)

[10]

SECTION B – ENERGY & CHANGE

QUESTION 2

A grade 8 boy rubs a balloon with a woollen cloth. Subatomic particles move from the woollen cloth to the balloon. The charged balloon is now brought close to a stream of water with a *neutral charge*, flowing gently from a tap as shown below.



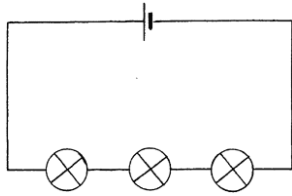
- 2.1 Identify the charge of the balloon. Give a reason for your answer. (2)
- 2.2 What is meant by '*neutral charge*.' (1)
- 2.3 Redraw the balloon and the water, showing the arrangement of charges in each, when they are brought closer together. (2)
- 2.4 Explain why the balloon and the water are attracted to each other, even though the water is neutral. (3)

[8]

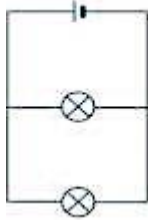
QUESTION 3

Study the circuit diagrams below and answer the questions that follow. All light bulbs are identical.

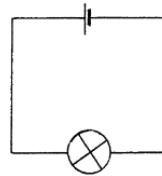
A



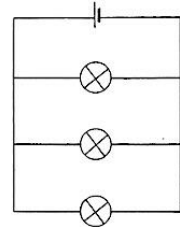
B



C



D



3.1 Identify the type of circuit (SERIES or PARALLEL) in diagrams:

3.1.1 A (1)

3.1.2 B (1)

3.2 In which circuit will the light bulbs be:

3.2.1 Brightest? (1)

3.2.2 Dimmest? (1)

3.2.2.1 Give a reason for your answer in question 3.2.2. (2)

3.3 What will happen to the CURRENT in the following scenarios?
(Only write INCREASE, DECREASE or STAY THE SAME)

3.3.1 Another light bulb is added to circuit C in series. (1)

3.3.2 One of the light bulbs in circuit D breaks. (1)

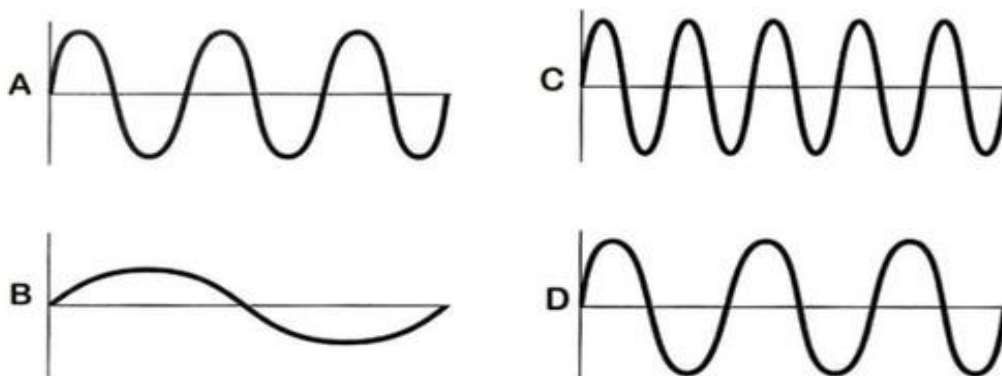
3.3.3 Give a reason for your answer in question 3.3.2. (2)

3.4 Redraw circuit C and include an additional conducting wire that will create a short circuit. (2)

[12]

QUESTION 4

Four waves are shown in the diagram below.



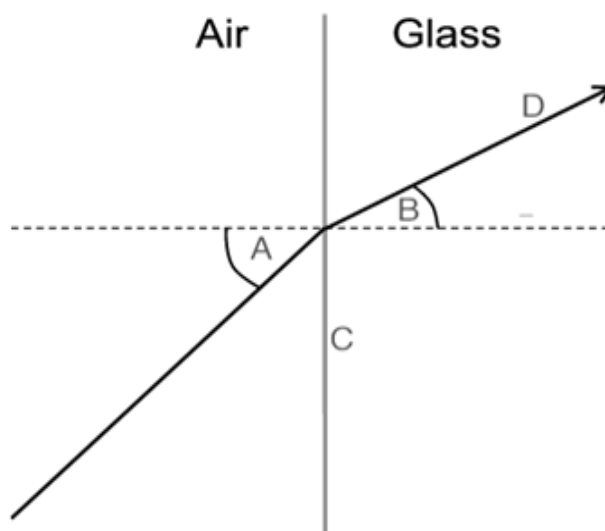
4.1.1 Which of the four waves has the longest wavelength? (1)

4.1.2 Which of the waves will most likely be reflected by RED objects? (1)

4.1.3 Which wave most likely represents the colour violet? (1)

4.1.4 Write a hypothesis that aims to establish a relationship between wavelength and frequency. (1)

4.2 The diagram below shows light moving from air into glass.

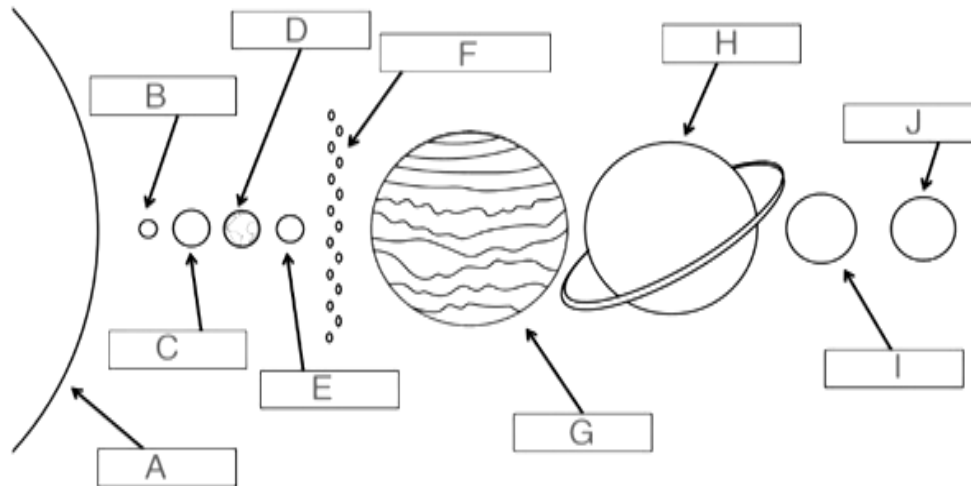


4.2.1 Provide labels for the letters A – D. (4)
[8]

SECTION C – EARTH & BEYOND

QUESTION 5

Study the diagram and answer the questions that follow.



- 5.1 What system is represented by this diagram? (1)
- 5.2 Provide the NAMES for:
- 5.2.1 The FOUR terrestrial planets. (4)
- 5.2.2 The largest gas planet. (1)
- 5.3 Provide labels for:
- 5.3.1 F (1)
- 5.3.2 H (1)
- 5.4 In 2006, Pluto was declassified as a planet. Give a reason why Pluto is not considered a planet. (1)
- 5.5 Rocks, that are not planets, are found in space. Provide the names for the following types of space rock:
- 5.5.1 A meteoroid that enters the Earth's atmosphere. (1)
- 5.5.2 The remains of a meteoroid after it crashes onto Earth's surface. (1)
- 5.5.3 An icy body that releases gases and dust as it gets close to the Sun. (1)
- 5.6 LIST and DESCRIBE TWO factors that make life possible on Earth. (4)

[16]

QUESTION 6

Astronomers have been looking into space using optical telescopes and in recent history, radio telescopes.

- 6.1 What is the name of the galaxy in which you will find our Sun and its planets? (1)
 - 6.2 What shape will our galaxy be when looking at it from:
 - 6.2.1 Earth (1)
 - 6.2.2 Above the galaxy (1)
 - 6.3 What are optical telescopes made of? (1)
 - 6.4 Briefly discuss why Radio telescopes are used to look into space? (2)
- [6]**

Total Marks: 60