education

Department of Education
FREE STATE PROVINCE

GRADE 8

NATURAL SCIENCES

NOVEMBER 2017

MARKS: 70

TIME: 1½ HOURS

This memorandum consists of 6 pages.

SECTION A

QUESTION 1.1

1.1.1 D✓

1.1.2 C✓

1.1.3 B✓

1.1.4 C✓

1.1.5 A✓

1.1.6 C✓

1.1.7 B✓

1.1.8 A✓

1.1.9 B✓

1.1.10 D✓ **[10]**

QUESTION 1.2

1.2.1 B✓
1.2.2 J✓
1.2.3 F✓
1.2.4 G✓
1.2.5 I✓ **[5]**

TOTAL SECTION A: 15

SECTION B

QUESTION 2

2.1 During a discharge, electrons move from one object to another.✓
This can cause a spark✓ that can cause an explosion of the petrol fumes. (2)

2.2.1 Type of cloth/fabric/material. ✓ (1)

2.2.2 Number of pieces of paper. ✓ (1)

2.2.3 Size/weight of the pieces of paper. ✓
OR
How many times the balloon is rubbed against the cloth. ✓ (1)

2.2.4 Polyester. ✓
When the balloon is rubbed against polyester, it picks up the smallest number of pieces of paper. The electrostatic build up on polyester is the smallest and the chance of a spark during electrostatic discharge is the smallest. ✓ (2)
[7]

QUESTION 3

3.1.1 Electrolysis✓ (1)

3.1.2 Anode✓ (1)

3.1.3 Gas bubbles✓ will form at one electrode/anode.
OR
You will be able to smell✓ the chlorine gas. (1)

3.1.4 The shoe will be covered with a reddish brown/copper layer. ✓ (1)

3.2.1 Electromagnet✓ (1)

3.2.2 Use a stronger battery/bigger current. ✓
Increase the number of turns of wire around the nail. ✓ (2)
[7]

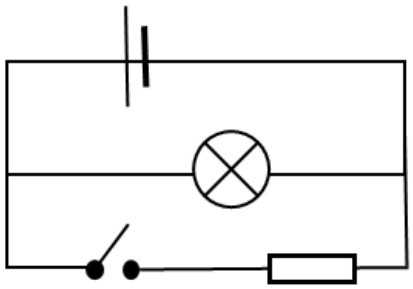
QUESTION 4

4.1.1 To open or close a circuit. ✓ (1)

4.1.2 Buzzer/beeper✓ (1)

4.2.1 When the resistor is removed, there is less resistance✓ in the circuit and a higher current✓ flows through the bulb. (2)

4.2.2



✓One mark for the bulb and resistor in a parallel connection.

✓One mark for the switch in series with the resistor

Subtract a mark for any extra components added.

(2)

4.3.1 Bulbs all have the same brightness. ✓ (1)

4.3.2 More resistors in parallel, ✓ less resistance. ✓ (2)
[9]

QUESTION 5

5.1.1 Spectrum✓ of white light. (1)

5.1.2 Colour 1 = Orange✓
Colour 2 = Indigo✓ (2)

5.2.1 Red✓ (1)

5.2.2 Black✓
The green dot cannot reflect the red light. ✓
OR
The green dot absorbs the red light. ✓ (2)

5.3.1 Q✓ (1)

5.3.2 40°✓ (1)

5.4

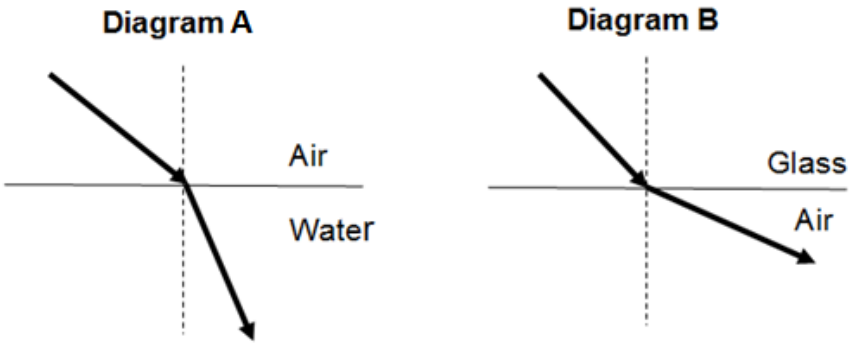


Diagram A: Refraction of light towards the normal. ✓
Diagram B: Refraction of light away from the normal. ✓ (2)
[10]

QUESTION 6

6.1.1 Earth, Mars, Jupiter✓✓✓ (3)

6.1.2 Mercury
Venus
Saturn
Uranus
Neptune **(any FOUR for 4 marks)**✓✓✓✓ (4)

6.1.3 The shorter the distance between a planet and the Sun,✓ the higher the average surface temperature✓ of the planet.
OR
The longer the distance between a planet and the Sun,✓ the lower the average surface temperature✓ of the planet.
OR
The closer the planet is to the sun, ✓ the higher the surface temperature of the planet. ✓
OR
The further away the planet is from the sun, ✓ the lower the surface temperature of the planet. ✓ (2)

6.1.4 Jupiter.✓
It takes Jupiter much longer to orbit the Sun✓ than both Mars and the Earth.
OR
The time for Jupiter to orbit the Sun is longer than the time for Mars and/or Earth to orbit the Sun. (2)

6.1.5 Temperature: Earth's distance from the Sun provides the ideal temperature range✓ to support life.

Water occurs in all three phases✓ (solid, liquid, gas) which is essential for most life processes on Earth.

Sunlight provides energy in the food chain.✓

The atmosphere contains oxygen needed for respiration.✓ (4)

6.2 According to Greek mythology our galaxy looks like droplets of spilled milk✓ which is responsible for naming it the Milky Way Galaxy. (1)

6.3 A light year is the distance✓ which light travels in one year.✓ (2)

6.4 The distances between celestial bodies (e.g. planets) are so large✓ that it would be impractical✓ to do distance measurements in kilometers in outer space. (2)

6.5.1 Telescope✓ (1)

6.5.2 Southern Cross✓ (1)
[22]

TOTAL SECTION B: 55
GRAND TOTAL: 70