education
Department of Education
FREE STATE PROVINCE

GRADE 8 **NATURAL SCIENCES** **NOVEMBER 2016**

TIME: 1½ HOURS **MARKS: 70**

MEMORANDUM

SECTION A

QUESTION 1

1.1 D✓✓

1.2 C✓✓

1.3 A✓✓

1.4 C✓✓

1.5 B✓✓

1.6 B✓✓

1.7 A✓✓

1.8 D✓✓

1.9 D✓✓

1.10 B✓✓ **[10]**

QUESTION 2

2.1 electric charges✓
2.2 negatively charged✓
2.3 positively charged✓
2.4 attract✓
2.5 repel✓ **[5]**

TOTAL SECTION A: 15

SECTION B

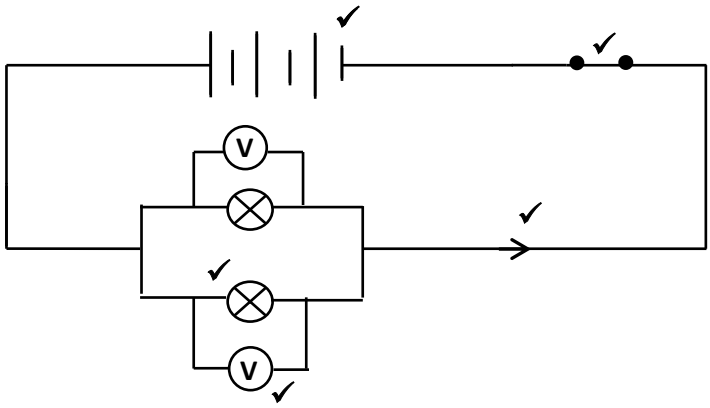
QUESTION 3

3.1 Silk cloth✓ (1)

3.2 The cloth and the rod attract one another✓. The rod and the cloth are oppositely charged.✓ (Oppositely charged objects attract one another.) (2)

3.3 The protons and neutrons are trapped in the core/nucleus✓ of atoms and is therefore unable to move (or be removed).✓ (2)

3.4



(5)

3.5 Decrease✓ (1)

3.6 (Any 2 of the following for 2 marks)✓✓

- If one bulb burns out, the remaining bulb(s) can still function.
- Bulbs connected in parallel can be switched on / off independently.
- Connecting more bulbs in parallel do not influence the brightness of the bulbs. (2)

3.7 Electrical energy✓ is converted to light energy.✓ (2)

3.8 The two voltmeter readings are the same,✓ because the two bulbs are connected in parallel✓ (components connected in parallel do not divide the potential difference.) (2)

3.9 The remaining bulb will continue to glow,✓ because there is an alternative pathway for the current to flow through.✓ (2)

[19]

QUESTION 4

4.1.1 A = Negative electrode **OR** cathode✓
B = Positive electrode **OR** anode✓
C = Copper chloride solution **OR** electrolyte✓ (3)

4.1.2 To provide an electrical current/energy to the circuit✓ enabling a chemical reaction to take place.✓**(Redox)** (2)

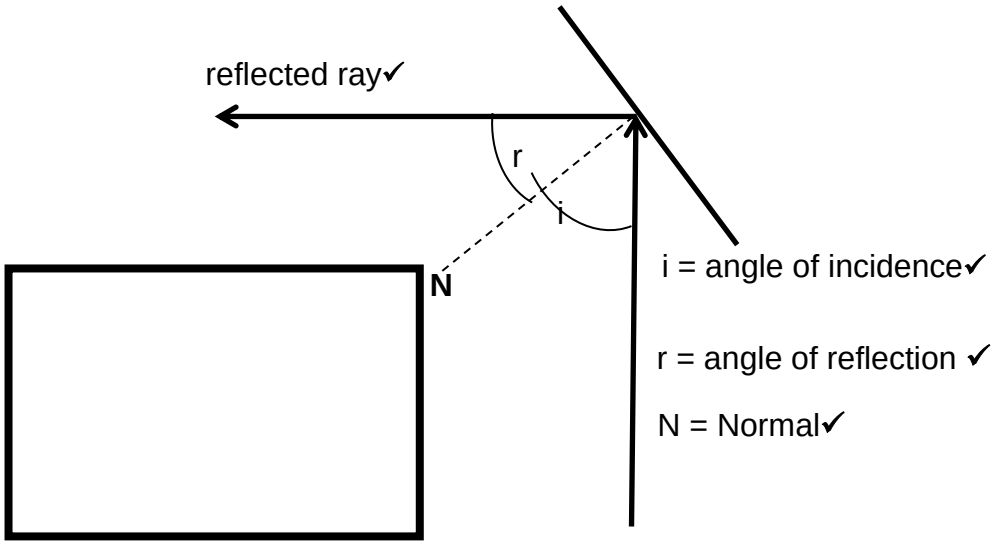
4.1.3 Copper OR Cu✓ (1)

4.1.4 Chlorine gas OR Cl_2✓ (Do not accept Cℓ) (1)

4.1.5 The process by which ionic substances are broken down✓ into simpler substances when an electric current✓ is passed through them.
OR
An electric current/energy breaks down/decomposes a compound into simpler substances or elements. (2)
[9]

QUESTION 5

5.1



(4)

5.2.1 Reflection✓ (1)

5.2.2 Refraction✓ (1)

5.2.3 Absorption✓ (1)
[7]

QUESTION 6

6.1 Alpha Centauri✓ (1)

6.2.1 A = Mercury✓
B = Venus ✓
C = Earth✓
D = Mars✓
E = Jupiter✓
F = Saturn✓
G = Uranus✓
H = Neptune✓ (8)

6.2.2 Dwarf planet✓ (1)

6.2.3 Asteroid belt **OR** Asteroids ✓ (1)

6.2.4 Gravity **OR** Gravitational force✓ (between Sun and the planets) (1)

6.2.5 The inner four planets are mostly made of rock✓, while the outer planets consist mostly of gas.✓(gaseous planets) (2)

6.3

- Temperature:✓ Earth's distance✓ from the Sun provides the ideal temperature range to support life.
- Water✓ occurs in all three phases✓ in Earth's temperature range.
- The right amount of sunlight✓ provides energy in the food chain.✓
- Oxygen✓ Early life forms and algae produced enough oxygen for the evolution of more sophisticated life forms
  OR atmosphere contains oxygen needed for respiration.✓

(Any 3 conditions and explanation for each: 3 x 2 = 6) (6)
[20]

TOTAL SECTION B: 55

GRAND TOTAL: 70