



GRADE 8

NATURAL SCIENCES

NOVEMBER 2015

TIME: 1½ HOURS

MARKS: 70

MEMORANDUM

SECTION A

QUESTION 1

1.1 B✓✓

1.2 C✓✓

1.3 D✓✓

1.4 A✓✓

1.5 A✓✓

[10]

QUESTION 2

2.1 distance✓

2.2 Southern Cross✓

2.3 Galaxy✓

2.4 charges✓

2.5 spectrum✓

[5]

SECTION B

QUESTION 3

3.1 electrons

(1)

3.2 Sally's hair was charged positively when it lost electrons while rubbing her hair with the balloon. The positively charged hair✓ is attracted electrostatically by the negatively charged balloon.✓

(2)

3.3.1 Incorrect✓

(1)

3.3.2 The ruler contains the same✓ number of positive and negative charges✓ which is responsible for making it neutral.

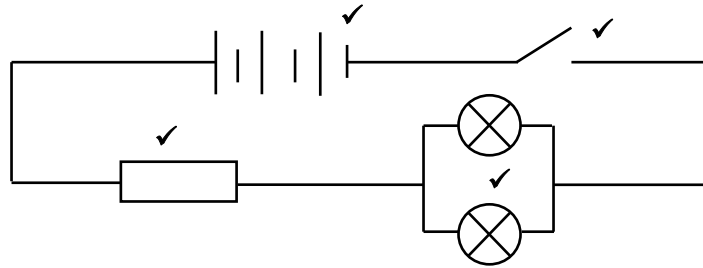
(2)

[6]

QUESTION 4

4.1

(4)



4.2 A resistor regulates✓ the current strength in a circuit. (1)

4.3 Chemical energy✓ is converted to electrical energy.✓ (2)

4.4.1 Independent variable: number of resistor✓ connected in series. (1)

4.4.2 Dependent variable: Current strength✓ (Ammeter reading) (1)

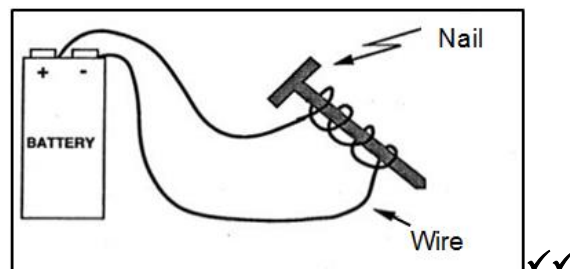
4.4.3 The results of the investigation **do not**✓ confirm Bongji's hypothesis.

Explanation: The results showed that the current strength decreases with an increase in the number of resistors connected in series.✓ (2)

[11]

QUESTION 5

5.1 Wind insulated copper wire around a soft metal nail.✓ Connect the two loose ends of the wire to the positive and negative terminals of a battery.✓



(4)

5.2 Increase the number of coils/turns around the nail.✓
Increase the current strength (Connect more cells in series)✓

(2)

[6]

QUESTION 6

- 6.1.1 P: Incident ray✓
Q: Reflected ray✓
R: Normal✓ (3)
- 6.1.2 X: Angle of incidence✓
Y: Angle of reflection✓ (2)
- 6.1.3 Angle (Y) will also decrease✓, because the angle of incidence is always equal to the angle of reflection.✓ (2)
- 6.1.4 A green plant will reflect green light,✓ therefore very little absorption of light, which is needed for photosynthesis, takes place.✓ (2)
- [9]**

QUESTION 7

- 7.1.1 The sun (A star)✓ (1)
- 7.1.2 Mercury✓ (1)
- 7.1.3 Jupiter✓ (1)
- 7.1.4 Mercury✓ (1)
- 7.1.5 Alpha Centauri✓ (1)
- 7.1.6 $142\,800\text{ km} - 120\,000\text{ km} = 22\,800\text{ km}$ ✓ (2)
- 7.1.7 Venus (1)
- 7.1.8 Venus has an atmosphere, ✓unlike Mercury, consisting of many gases, including a high concentration of carbon dioxide gas (a greenhouse gas). The greenhouse gases trap heat✓ energy in the atmosphere and is responsible for the average higher temperature on Venus. (2)

7.1.9	Mars.✓ The time taken by Mars to complete one rotation is more or less the same as the time taken by Earth to complete one rotation.✓ (The rotation period for Mars and Earth is almost the same.)	(2)
7.1.10	Mars✓	(1)
7.2	Temperature: The temperature on Earth is ideal for supporting life.✓ Water occurs in all three phases inside this temperature range.✓ Sunlight: ✓ sufficient sunlight is available as primary source of energy in food chains.✓ Oxygen: ✓ Enough oxygen was produced by early life forms for more sophisticated life forms to evolve.✓	(6)
7.3.1	Hydrogen gas (H ₂)✓	(1)
7.3.2	Helium gas (He)✓	(1)
7.3.3	Heat energy✓ Light energy✓	(2)
		[23]
	TOTAL:	70