

NATURAL SCIENCE GRADE 8

MEMORANDUM

NOVEMBER 2023

SECTION A

QUESTION 1

- | | | |
|------|----|-------------|
| 1.1 | B✓ | (1) |
| 1.2 | B✓ | (1) |
| 1.3 | C✓ | (1) |
| 1.4 | B✓ | (1) |
| 1.5 | A✓ | (1) |
| 1.6 | B✓ | (1) |
| 1.7 | C✓ | (1) |
| 1.8 | D✓ | (1) |
| 1.9 | B✓ | (1) |
| 1.10 | A✓ | (1) |
| | | [10] |

QUESTION 2

- | | | |
|-----|--|------------|
| 2.1 | Electron✓ | (1) |
| 2.2 | Speed of light✓ (in an empty space / vacuum) | (1) |
| 2.3 | Transparent✓ substances | (1) |
| 2.4 | Venus✓ | (1) |
| 2.5 | Solar system✓ | (1) |
| | | [5] |

QUESTION 3

- | | | |
|-----|----|------------|
| 3.1 | E✓ | (1) |
| 3.2 | D✓ | (1) |
| 3.3 | A✓ | (1) |
| 3.4 | C✓ | (1) |
| 3.5 | G✓ | (1) |
| | | [5] |

TOTAL SECTION A: 20

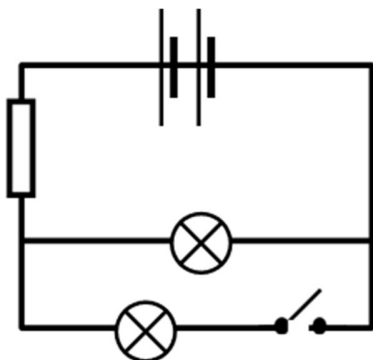
SECTION B**QUESTION 4**

- | | | |
|-----|------------|------------|
| 4.1 | friction✓ | (1) |
| 4.2 | rubbing✓ | (1) |
| 4.3 | electrons✓ | (1) |
| 4.4 | gains ✓ | (1) |
| 4.5 | loses✓ | (1) |
| 4.6 | repel✓ | (1) |
| 4.7 | the same✓ | (1) |
| 4.8 | neutral✓ | (1) |
| | | [8] |

QUESTION 5

- | | | |
|-------|--------------------|-----|
| 5.1.1 | (Open) switch✓ | (1) |
| 5.1.2 | Battery / 5 cells✓ | (1) |
| 5.1.3 | Resistor✓ | (1) |

5.2

**Marking criteria:**

- ✓ Two cells in series
- ✓ Two bulbs in parallel
- ✓ One resistor in series with the two bulbs in parallel (on either side of the bulbs in parallel)
- ✓ An open/closed switch in series with one of the bulbs in either one of the parallel branches

(4)
[7]

MEMORANDUM

QUESTION 6

- 6.1 C✓ (1)
- 6.2 A✓ (1)
- 6.3 B✓ (1)
- 6.4.1 Electromagnet✓ (1)
- 6.4.2 When the switch is opened, the circuit is broken, the current stops flowing, and the iron nail loses its magnetic properties. ✓
OR
The iron nail is only magnetic while the current flows. ✓ (1)
- 6.4.3 Increase the number of wire-turns (in the coil) around the nail.✓
Use a stronger power source (with higher voltage) / more cells in series / stronger current. ✓
Use thicker wire✓ with lower electrical resistance in the coil.
Winding the wire tightly and uniformly✓ around the nail without gaps.
(ANY TWO) (2)
- 6.5.1 The copper chloride splits up / decomposes / breaks up✓ into copper (metal) and chlorine (gas). ✓ (2)
- 6.5.2 (Blue) copper chloride✓ solution (1)
- 6.5.3 The reddish brown metal / layer / deposit✓ that forms around the one electrode/cathode. (1)
- 6.5.4 Chlorine✓ (1)
- 6.5.5 Anode✓ (1)
- 6.5.6 Electrical energy✓ is converted into chemical energy.✓ (2)

[15]

MEMORANDUM

QUESTION 7

- 7.1.1 Only one pathway for electric current to flow. ✓
OR
All components/devices are connected one after another in a single pathway. ✓ (1)
- 7.1.2 The switch is open ✓ and the current cannot flow.
OR
The circuit is incomplete / broken. ✓ (1)
- 7.1.3 One or more bulbs are broken / fused. ✓
The battery is flat. ✓
There is break in the conducting wire **OR** A poor/faulty connection between two components. ✓ **(ANY TWO)** (2)
- 7.1.4 If any component or device in the circuit fails/fuses, all other components fail. ✓ (1)
- 7.2.1 There are two or more pathways for the electric current to flow through. ✓ (1)
- 7.2.2 B and C will continue to shine / glow. ✓ (1)
- 7.2.3 Overall resistance will decrease. ✓ (1)
- 7.2.4 Brightness will increase / bulbs will glow brighter. ✓ (1)
- 7.3.1 Circuit A: Bulbs in series ✓ have a higher overall resistance. ✓
OR
Circuit B: Bulbs in parallel ✓ have a lower overall resistance. ✓ (2)
- 7.3.2 More bulbs in parallel; less resistance; brightness remains the same. ✓
Bulbs can be switched on and off independently from one another.
OR
If one bulb fuses, the other will still glow. ✓ (2)

[13]

MEMORANDUM

QUESTION 8

- 8.1 Burning match **OR** Sun ✓ (1)
- 8.2 The moon does not emit light of its own. ✓
OR
The moon only reflects light from the sun and does give off its own light. ✓ (1)
- 8.3.1 A - Orange
B - Green
C - Violet (3)
- 8.3.2 Spectrum✓ of white light (1)
- 8.4.1 Book✓ (1)
- 8.4.2 When white light shines on the surface of the blue book, the book reflects only blue light✓ (which reaches the eye) and absorbs all other colours✓ of white light. (2)
[9]

QUESTION 9

- 9.1 Light rays travel in straight lines✓ from the source to the eye. (1)
- 9.2.1 Diagram 2✓ (1)
- 9.2.2 Reflected ray✓ (1)
- 9.2.3 Angle 1 = Angle 2 / Angle 1 and angle 2 are the same size. ✓ (1)
- 9.2.4 The Law of Reflection✓ (1)
[5]

QUESTION 10

- 10.1 Sun✓ (1)
- 10.2 Helium / He✓ (1)
- 10.3 Mars✓ (1)
- 10.4 The moon orbits the earth, and not the sun. ✓ (1)
- 10.5 365 days / 1 year / 365¼ days / 365,25 days✓ (1)
- 10.6 Jupiter✓ (1)
- 10.7 Pluto✓ (1)

MEMORANDUM

- 10.8 Gravity / Gravitational force✓ (1)
- 10.9 Between Mars and Jupiter✓ (1)
- 10.10 -Earth's distance from the sun provides the ideal **temperature** range / Earth is not too hot or too cold. ✓
- Earth has just the right temperatures so that **water** can be in each of the three phases: solid, liquid and gas. ✓
- Earth gets the right amount of **sunlight** to provide energy for food chains or photosynthesis.✓
- Earth has the right amount of **oxygen** needed for respiration / support life.✓
(ANY THREE) (3)
- [12]**

QUESTION 11

- 11.1 The Milky Way✓ Galaxy (1)
- 11.2 The Greeks called it the Milky Way because it looks like spilled milk. ✓
OR
"Milky Way" comes from a faint band of light stretching across the night sky which looks milky or cloudy in texture, hence the name. ✓ (1)
- 11.3 A group of stars✓ and their solar systems.✓
OR
A huge collection of gas, dust, and billions of stars and their solar systems, ✓ all held together by gravity. ✓ (2)
- 11.4 Spiral✓ shape. (1)
- 11.5.1 The Southern Cross✓ (1)
- 11.5.2 Alpha Centauri✓ (**Accept:** Proxima Centauri) (1)
- 11.5.3 (Approximately) 4,2 light years.✓ (1)
- 11.5.4 A light year is distance✓ that light travels in one year. ✓ (2)
- 11.5.5 The light year is used to measure distances in space because the distances are very large / incredibly vast, which makes the use of kilometers impractical. ✓ (1)
- [11]**

TOTAL SECTION B: 80
GRAND TOTAL: 100