



**education**

Department of  
Education  
FREE STATE PROVINCE

**EXPERIMENT / *EKSPERIMENT***

**GRADE 10 / *GRAAD 10***

**TECHNICAL SCIENCES  
*TEGNIJES WETENSKAPPE***

**MEMORANDUM**

**MARCH 2018 / *MAART 2018***

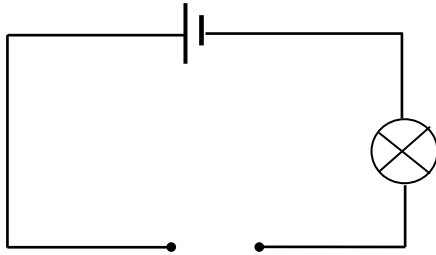
**MARKS: 15 / *PUNTE: 15***

**TIME: 30 MINUTES / *TYD: 30 MINUTE***

This memorandum consists of **THREE** pages.  
Hierdie memorandum bestaan uit **DRIE** bladsye.

### QUESTION 1 / VRAAG 1

1.1



Marking criteria / Nasienriglyne	Mark Punt
Correct symbol for cell (at least one) <i>Korrekte simbool vir sel (ten minste een)</i>	✓
Correct symbol for bulb <i>Korrekte simbool vir gloeilamp</i>	✓
Opening in circuit or indication that materials to be tested will be connected there. <i>Opening in die stroombaan of 'n aanduiding dat die materiaal wat getoets word daar geskakel word.</i>	✓

(3)

- 1.2 **A:** Indicates whether charges flow or not; OR  
Indicates whether the circuit is complete; OR  
Something similar.

*Dui aan of die ladings vloei of nie; OF*  
*Dui aan of die stroombaan voltooi is of nie; OF*  
*Iets soortgelyk.*

(1)

- B:** Ensures the flow of charges; OR  
It is the electrical conductor; OR  
Something similar.

*Verseker dat die ladings vloei; OF*  
*Dit is die elektriese geleidingsdraad; OF*  
*Iets soortgelyk.*

(1)

- C:** Supplies electrical (potential) energy.  
*Voorsien elektriese (potensiële) energie.*

(1)

- 1.3 Ammeter OR/OF  
Multimeter OR/OF  
Any device that demonstrates continuity (not voltmeter).  
*Enige toestel wat kontinuïteit demonstreer (nie voltmeter nie).*

(1)

1.4.1

Marking criteria / Nasienriglyne	Mark Punt
Refers to dependent and independent variables. <i>Verwys na die afhanklike en onafhanklike veranderlike.</i>	✓
A question is asked (question mark compulsory). <i>'n Vraag word gevra (vraagteken noodsaaklik).</i>	✓

Example / Voorbeeld

Which of these materials conduct electricity?

*Watter van hierdie materiale gelei elektrisiteit?* (2)

1.4.2 Electrical conductivity / *Elektriese geleiding* ✓ (1)

1.4.3 Type of material / *Soort materiaal* ✓ (1)

1.4.4 Yes / *Ja* ✓



A pencil's lead is made of carbon/graphite that can conduct electricity.

*'n Potlood se lood is van koolstof/grafiet gemaak wat elektrisiteit kan gelei.* ✓ (2)

1.5 The cell/battery is flat; OR  
A bad connection somewhere; OR  
Something similar.

Die sel/battery is pap; OF  
Êrens is 'n slegte konneksie; OF  
iets soortgelyk. (2)

**GRAND TOTAL / GROOTTOTAAL: 15**