



education

Department of
Education
FREE STATE PROVINCE

GRADE 10/GRAAD 10

PROVINCIAL FORMAL
ASSESSMENT TASK

*PROVINSIALE FORMELE
ASSESSERINGSTAAK*

MARCH 2015/MAART 2015

MEMORANDUM

PHYSICAL SCIENCES/FISIESE WETENSKAPPE
CONTROL TEST/KONTROLETOETS

TIME: 2 HOURS

TYD: 2 UUR

MARKS: 100

PUNTE: 100

**This memorandum consists of 5 pages.
*Hierdie memorandum bestaan uit 5 bladsye.***

QUESTION 1/VRAAG 1

1.1 D ✓✓

1.2 B ✓✓

1.3 C ✓✓

1.4 A ✓✓

1.5 A ✓✓

1.6 B ✓✓

1.7 A ✓✓

1.8 B ✓✓

1.9 B ✓✓

1.10 D ✓✓

(10x 2) = **[20]****QUESTION 2/VRAAG 2**2.1.1 Homogeneous mixture/*Homogene mengsel* ✓ (1)2.1.2 Pure substance/*Suiwer stof* ✓ (1)2.1.3 Heterogeneous mixture/*Heterogene mengsel* ✓ (1)2.2.1 Filtration/*Filtrasie* ✓ (1)2.2.2 Solubility/*Oplosbaarheid* ✓ (2)

2.3.1 C ✓ (1)

2.3.2 D ✓ (1)

2.4. To determine if a substance is pure or not/*Om vas te stel of 'n stof suiwer is of nie* ✓ (1)2.5.1 Compound/*Verbinding* ✓ (1)

2.5.2 Element ✓ (1)

[11]

QUESTION3/VRAAG 3

3.1

- 3.1.1 Sulphur trioxide/Swaweltrioksied ✓✓ (2)
- 3.1.2 $\text{Ca}(\text{NO}_3)_2$ ✓✓ (2)
- 3.1.3 Potassium Sulphate/Kaliumsulfaat ✓✓ (2)
- 3.1.4 NaI ✓✓ (2)
- 3.1.5 Calcium Chloride/Kalsiumchloried ✓✓ (2)
- 3.1.6 $\text{Ca}(\text{OH})_2$ ✓✓ (2)
- 3.1.7 Magnesium Carbonate/Magnesiumkarbonaat ✓✓ (2)
- 3.1.8 Cl_2 ✓✓ (2)

[16]**QUESTION 4 / VRAAG 4**

4.1

- 4.1.1 Fe ✓ (1)
- 4.1.2 F, Cl or/of Br (Any ONE/Enige EEN) ✓ (1)
- 4.1.3 Be ✓ (1)
- 4.1.4 He, Ne, Ar or/of Br (Any one/Enige een) ✓ (1)
- 4.1.5 F and/en Br (Any one/Enige een) ✓ (1)
- 4.1.6 Br ✓ (1)
- 4.1.7 S ✓ (1)
- 4.1.8 K ✓ (1)
- 4.1.9 Li ✓ (1)
- 4.1.10 Na ✓ (1)

- 4.2. Across the same period each consecutive element has one more proton than the previous one ✓ nitrogen has more electrons than carbon ✓ / *Stikstof het een meer proton as koolstof ✓ en lê daarom een plek na koolstof in die periode ✓* (2)

4.3

- 4.3.1 In light bulbs/In gloeilampe ✓ (1)
- 4.3.2 To kill bacteria in water/Maak bakterieë dood in water ✓ (1)
- 4.3.3 As a lubricant/As 'n smeermiddel ✓ (1)

4.3.4 In balloons/in ballonne ✓ (1)

4.4

4.4.1 Isotopes ✓ (1)

4.4.2 Atoms of the same element with the same atomic number✓ but different mass numbers✓ /
Atome van dieselfde element met dieselfde atoomgetal ✓ maar verskillende massagetalle✓ (2)

4.4.3 Relative atomic mass/ *Relatiewe atoommassa* = $\frac{(22,5 \times 37) + (77,5 \times 35)}{100}$ ✓
= 35,5✓ (3)

[22]

QUESTION 5/VRAAG 5

5.1 Ionic bond/*Ioniese binding* ✓ (1)

5.2 An electron is transferred✓ from a metal sodium atom to a non-metal chlorine atom✓ /*n elektron word oorgedra ✓ vanaf die natriummetaal na die chloor nie- metaal*✓ (2)

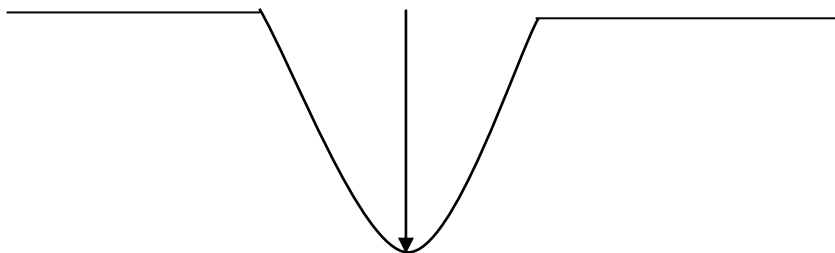
5.3 $\text{Na} \bullet \checkmark + \bullet \ddot{\text{Cl}} \bullet \checkmark = \text{Na}^+ \checkmark \quad [\bullet \ddot{\text{Cl}} \bullet] \checkmark$ (4)
[7]

QUESTION 6/VRAAG 6

6.1.1 A single disturbance✓ propagated through a medium ✓/*n Enkele versteuring ✓ in 'n medium* ✓ (2)

6.1.2 (Destructive) Interference/Superposition/*(Destruktiewe) interferensie/Superponering*✓✓ (2)

6.1.3



Amplitude = -2,0 cm	✓
Down shape/ <i>Afwaartse kurwe</i>	✓
Arrow inside the pulse/ <i>Pyl binne die pulse</i>	✓

(3)

$$6.1.4 \quad v = \frac{\Delta x}{\Delta t} \checkmark$$

$$= \frac{0,06}{1,5} \checkmark$$

$$= 0,04 \text{ m} \cdot \text{s}^{-1} \checkmark \quad (4)$$

$$6.2.1 \quad 1,5 \lambda = 1,2 \text{ m} \checkmark$$

$$\lambda = 0,8 \text{ m} \checkmark \quad (2)$$

$$6.2.2 \quad \text{Time to cover/Tyd vir } \frac{1}{2} \lambda = 0,375 \text{ s} \checkmark$$

$$\text{Time to cover/Tyd vir } 1 \lambda = \left(\frac{1}{1,5} \times 0,375 \right)$$

$$= 0,25 \text{ s}$$

$$f = \frac{1}{T} \checkmark$$

$$f = \frac{1}{0,25}$$

$$f = 4 \text{ Hz} \checkmark \quad (3)$$

[16]

QUESTION 7/VRAAG 7

$$7.1 \quad \text{Sound C / Klank C} \checkmark \text{ It has the largest amplitude/Dit het die grootste amplitude} \checkmark \quad (2)$$

7.2

$$7.2.1 \quad \text{The movement of the particle of the medium} \checkmark \text{ is parallel to the direction of propagation of the wave} \checkmark / \text{Die deeltjies in die medium} \checkmark \text{ beweeg parallel aan die bewegingsrigting van die golf} \checkmark \quad (2)$$

$$7.2.2 \quad v = f \lambda \checkmark$$

$$342 = f \cdot 0,019 \checkmark$$

$$f = 18\,000 \text{ Hz} \checkmark$$

$$\text{The human ear can hear it} \checkmark / \text{Die menslike oor kan dit hoor} \checkmark \quad (4)$$

[8]

GRAND TOTAL/GROOTTOTAAL: 100