education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

PROVINCIAL ASSESSMENT/*PROVINSIALE ASSESSERING*

GRADE/*GRAAD 10*

TECHNICAL SCIENCES P2/*TEGNIESE WETENSKAPPE V2*

NOVEMBER 2024

MAKING GUIDELINE/*NASIENRIGLYNE*

MARKS/*PUNTE*: 75

TIME/*TYD*: 1½ hours/*uur*

These marking guidelines consist of 6 pages.
Hierdie nasienriglyne bestaan uit 6 bladsye.

QUESTION 1/*VRAAG 1*

1.1 B ✓✓ (2)

1.2 C ✓✓ (2)

1.3 C ✓✓ (2)

1.4 D ✓✓ (2)

1.5 B ✓✓ (2)

1.6 C ✓✓ (2)

1.7 C ✓✓ (2)

[14]

QUESTION 2/*VRAAG 2*

2.1 Element: a pure substance that consists of the SAME type of atoms ✓✓
Compound: a pure substance that consists of two or more types of atoms that have chemically bonded in a fixed ratio. ✓✓

Element: 'n suiwerstof wat bestaan uit dieselfde tipe atome

Verbinding: 'n suiwerstof wat bestaan uit twee of meer tipes atome wat chemies verbind het in 'n vaste verhouding (4)

2.2.1 **P** ✓✓ (2)

2.2.2 **Q** ✓✓ (2)

2.2.3 **R** ✓✓ (2)

2.3.1 H_2 ✓✓ (2)

2.3.2 CO_2 ✓✓ (2)

2.4 6 + 8 + 8 = 22 ✓✓ (2)

[16]

QUESTION 3/*VRAAG 3*

3.1 The number of protons and neutrons in the atom. ✓✓ (2)
Die aantal protone en neutrone in die atoom.

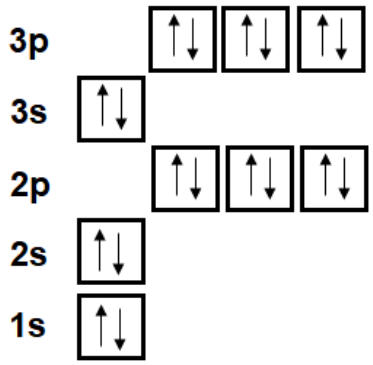
3.2.1 11 ✓✓ (2)

3.2.2 30 ✓✓ (2)

3.3.1 Na ✓✓ (2)

3.3.2 Silicon / *Silikon* ✓✓ (2)

3.4



✓ 3rd energy level / *3de energievlak*
✓ 2nd energy level / *2de energievlak*
✓ 1st energy level / *1ste energievlak*

(3)
[13]

QUESTION 4/*VRAAG 4*

4.1.1 A single type of substance/material (element or compound). ✓✓ (2)
'n Enkel tipe stof/materiaal (element of verbinding)

4.1.2 $CH_4 + 2O_2$ ✓ → $2H_2O + CO_2$ ✓ ✓ Balancing/*Balansering* (3)

4.1.3 Oxygen */ Suurstof* ✓✓ (2)

4.2.1 Magnesium chloride / *Magnesiumchloried* ✓✓ (2)

4.2.2 Alkali earth metals OR Earth alkali metals ✓ (1)
Alkali aardmetaal OF Aardalkalimetaal

4.2.3 1 (ONE) ✓ (1)

4.3.1 Element **X** ✓ (1)

4.3.2
- Malleable / ductile
- High density
- High melting point
- High boiling point (ANY ONE)

- *Smeebaar / buigbaar*
- *Hoë digtheid*
- *Hoë smeltpunt*
- *Hoë kookpunt* *(ENIGE EEN)* (1)

4.3.3 Co / Ni / Fe ✓ (ANY ONE/*ENIGE EEN*) (1)
[14]

QUESTION 5/*VRAAG 5*

5.1.1 Heat: a form of energy. ✓✓

Temperature: an indication of how hot or cold a body / object is. ✓✓

Hitte: 'n vorm van energie

Temperatuur: 'n aanduiding van hoe warm of koud 'n liggaam / voorwerp is (4)

5.1.2 Joule (J) ✓✓ (2)

5.1.3 Kelvin (K) ✓✓ (2)

5.2.1
- Accurate ✓
- Can measure extreme low temperatures ✓
- Cheap
- Alcohol expands easily (ANY TWO)

- *Akkuraat*
- *Kan ekstreme koue temperature meet*
- *Goedkoop*
- *Alkohol sit maklik uit* *(ENIGE TWEE)* (2)

5.2.2
- Poisonous ✓
- Cannot measure low temperatures ✓
- Sometimes difficult to see
- Absorbs the heat of the system (ANY TWO)

- *Giftig*
- *Kan nie lae temperature meet nie*
- *Soms moeilik om te kan sien*
- *Absorbeer die sisteem se hitte* *(ENIGE TWEE)* (2)

5.2.3 Thermoelectric thermometer ✓ (1)

Termo-elektriese termometer

5.2.4
- Atmosphere temperature measure ✓
- Oven temperature measure ✓
- Clinical thermometer uses in patients
- Motor vehicle engine temperature measure
- Freezer / refrigerator temperature measure
- Monitor processes in technology
- Measure aircraft's wing temperature

(ANY TWO RELAVENT)

- *Meet van atmosferiese temperatuur*
- *Meet van oond temperatuur*
- *Kliniese termometers gebruik in patiënte*
- *Motorvoertuig se enjin temperatuur meet*
- *Vrieskas / yskas temperatuur meet*
- *Monitor prosesse in tegnologie*
- *Meet vliegtuig se vlerk temperatuur*

(ENIGE RELAVANTE TWEE) (2)

5.3.1 $T = t + 273$ ✓
$T = 62 + 273$ ✓
$T = 335\ K$ ✓ (3)

[18]

TOTAL/*TOTAAL*: 75