SECTION A/*AFDELING A*

Question 1/*Vraag 1*

1.1	A	1.2	C	1.3	D	1.4	D	1.5	A
1.6	B	1.7	C	1.8	A	1.9	A	1.10	C
1.11	D	1.12	D	1.13	A	1.14	B	1.15	B

[15 x 3 = 45]

SECTION B/*AFDELING B*

Question 2/*Vraag 2*

2.1.1 A solution of which the concentration is known exactly. ✓✓ (2)
'n Oplossing waarvan die konsentrasie presies bekend is

2.1.2 n = c x V✓ = 0,5 x 0,2 ✓= 0,1 mol ✓ (3)

2.1.3 m = n x M ✓ = 0,1 x 106 ✓= 10,6 g ✓ (3)

2.2.1 Boyle's Law ✓✓ (No marks for relationship) (2)
Boyle se wet (Geen punte vir verwantskap nie)

2.2.2 Temperature /*Temperatuur* ✓ (1)

2.2.3 High Pressure ✓and low temperature✓ (2)
Hoë druk en Lae temperatuur

2.2.4 $P_1V_1 = P_2V_2$ ✓

$$p_2 = \frac{p_1V_1}{V_2} = \frac{100x5,0}{6,0} = 83,33kPa$$ ✓ ✓ ✓ (4)

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Question 3/*Vraag 3*

3.1.1 $2HC\ell + Na_2SO_3 \rightarrow H_2O + SO_2 + 2NaC\ell$ (✓balancing/ *balansering*) (3)

3.1.2 H_2S ✓ (1)

3.1.3 Sulphur ✓ and water ✓ (2)
Swawel en water

3.2.1 A substance that will extract ✓ water. ✓ (2)
'n Stof wat water sal onttrek

3.2.2 Blue crystals turn white ✓ (2)
The crystalline structure disappears or it becomes an amorphous powder. ✓
Blou kristalle kleur wit.
Die kristalstruktuur sal verdwyn of dit word 'n amorfe poeier.

[10]

Question 4/*Vraag 4*

4.1.1 Nitrogen dioxide /*Stikstofdioksied*✓✓ (2)

4.1.2 Copper nitrate /*Kopernitraat*✓✓ (2)

4.1.3 $NO_3^- + 2H^+ + e^-$ ✓ → $NO_2 + H_2O$ ✓ (2)

4.2.1 $2NaC\ell$ ✓ + H_2SO_4 → $2HC\ell$ ✓ + Na_2SO_4 (✓balancing/*balansering*) (3)

OR/*OF*

$2NaC\ell + H_2SO_4 \rightarrow 2HC\ell + NaHSO_4$

4.2.2 Hydrochloric acid /*Soutsuur* ✓✓ (2)

4.2.3 Upward displacement of air / *Opwaartse verplasing van lug* ✓✓ (2)

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Question 5

5.1 Exothermic/ *Eksotermies* ✓ (1)

5.2 Catalyst/*Katalisator* ✓✓ (2)

5.3.1 Both/ *Beide* ✓✓ (2)

5.3.2 Both/ *Beide* ✓✓ (2)

5.3.3 Both/ *Beide* ✓✓ (2)

5.4.1 Increases/ *Neem toe* ✓✓ (2)

5.4.2 Increases/ *Neem toe* ✓✓ (2)

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Question 6/ *Vraag 6*

6.1.1 $HNO_3 + H_2O$✓ → $H_3O^+ + NO_3^-$ ✓ / $HNO_3 \xrightarrow{H_2O} H^+ + HNO_3^-$ (2)

6.1.2 H^+ or/*of* H_3O^+ ✓✓ (2)

6.1.3 HNO_3 ✓✓ (2)

6.1.4 Oxalic acid/ *Oksaalsuur* ✓✓ (2)

6.2.1 A substance that can react as an acid or a base. ✓✓ (2)
'n Stof wat beide as 'n suur of 'n basis kan optree

6.2.2 ✓✓ ✓ ✓

$H_2O + H_2O \rightleftharpoons H_3O^+ + OH^-$

OR/*OF*

$H_2O \rightarrow H^+ + OH^-$ ✓✓ and/*en* $H_2O + H^+ \rightarrow H_3O^+$ ✓✓ (4)

6.3.1 $n = c \times V$ ✓ $= 0,05 \times 0,1$ ✓ $= 0,005$ mol ✓ (3)

6.3.2 2 mol $NaOH \rightarrow 1$ mol $(COOH)_2$
$\therefore 0,005$ mol $NaOH \rightarrow 0,0025$ mol $(COOH)_2$ ✓✓ (2)

6.3.3 $c = \frac{n}{V} \overset{\checkmark}{=} \frac{0,0025}{0,04} = 0,0625 mol.dm^{-3}$ ✓ (3)

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Question 7 *Vraag 7*

7.1.1 A ✓ (1)

7.1.2 Cu is not a strong enough reducing agent to reduce Zn^{2+} to Zn. ✓✓ (4)
Cu is nie 'n sterk genoeg reduseermiddel om Zn^{2+} na Zn te reduseer nie
OR/*OF*
Zn^{2+} is not a strong enough oxidising agent to oxidise Cu to Cu^{2+}.
Zn^{2+} is nie 'n sterk genoeg oksideermiddel om Cu na Cu^{2+} te oksideer nie

7.1.3 $Zn + CuSO_4$ ✓ $\rightarrow ZnSO_4 + Cu$ ✓ (✓Balancing/*balansering*) (3)

7.1.4 Black and/or reddish brown and/or copper precipitate forms on the solid Zn ✓ (2)
Blue colour disappears. ✓
Swart en/of rooibruin en/of koper neerslag vorm op die soliede Zn
Blou kleur verdwyn

7.2.1 Q ✓ (2)

7.2.2 Reducing agent/ *Reduseermiddel* ✓ (1)

7.2.3 $Ag \rightarrow Ag^+ + e^-$ ✓✓ (2)

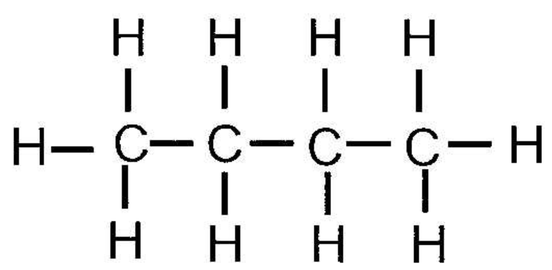
[15]

Question 8

8.1 C_nH_{2n+2} ✓✓ (2

8.2 Gas ✓✓ (2)

8.3



✓✓ (2)

8.4 Gas is under pressure / *Gas verkeer onder druk* ✓✓ (2)

8.5 A ✓ (1)

8.6 $2C_4H_{10} + 13O_2$ ✓ $\rightarrow 8CO_2 + 10H_2O$ ✓ (✓balancing/*balansering*) (3)

8.7 Carbon or carbon monoxide ✓✓ (2)
Koolstof of koolstofmonoksied

[14]

TOTAL: 150

