

PHYSICAL SCIENCE P2 /SG
1
SENIOR CERTIFICATE EXAMINATION

MULTIPLE CHOICE/ MEERVOUDIGE KEUSE

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

3 x 15 =[45]

QUESTION 2 /VRAAG 2

2.1

2.1.1 B or/of S YY (2)

2.1.2 D or/of SO₂ YY (2)

2.1.3 E or/of C₆H₁₄ YY (2)

2.1.4 A or/of NaCl YY (2)

2.2

2.2.1 101,3 kPa YY (2)

2.2.2 The plunger moves out/volume of gas in syringe increases. YY (2)
Die suier beweeg uitwaarts/volume gas in die gasspuit neem toe.

2.2.3 Increase in temperature causes the kinetic energy (E_k) of He atoms to increase; particles move faster, gas in syringe expands/pressure increases. Y (3)
(frequently with the walls of the container)
Toename collides more in temperatuur verhoog die kinetiese energie (E_k) van die He atome, deeltjies beweeg vinniger, en gas in gasspuit sit uit/ druk verhoog. (bots meer gereeld met wand van houer)

2.2.4 V₁ = 40 cm³ V₂ = ?
T₁ = 273 K T₂ = (273 + 80) = 353K

$$\frac{V_1}{T_1} = \frac{V_2}{T_2} \quad Y$$

$$\frac{40}{273} Y = \frac{V_2}{353Y}$$

$$\therefore V_2 = \frac{(40 \times 353)}{273}$$

$$\square V_2 = 51,52 \text{ cm}^3 \quad Y \quad (4) \quad [19]$$

QUESTION 3/ VRAAG 3

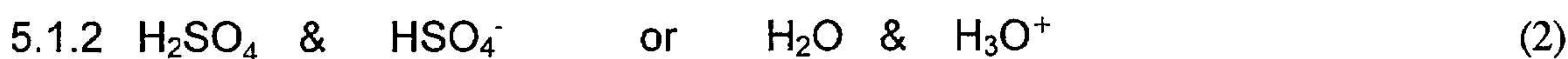
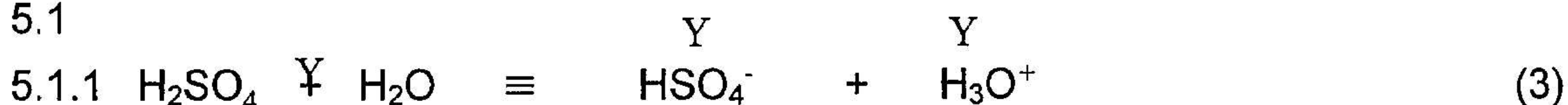
- 3.1 Y
- 3.1.1 $\text{SO}_2 + 2\text{Mg} \rightarrow 2\text{MgO} + \text{S}$ (Y balancing/ *balansering*) (3)
- 3.1.2 Redox/ *Redoks* YY (2)
- 3.1.3 Oxidising Ability/Oxidising Agent YY (2)
Oksideer vermoë/ Oksideermiddel
- 3.2 Y
- 3.2.1 $4\text{HNO}_3 \rightarrow 4\text{NO}_2 + \text{O}_2 + 2\text{H}_2\text{O}$ (Y balancing/ *balansering*) (3)
- 3.2.2 Nitrogen dioxide/ *Stikstofdiksied* YY (NO₂)^Y (2)
- 3.3 Y
- 3.3.1 $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + \text{Br}_2$ (Y balancing/ *balansering*) (3)
- 3.3.2 Potassium chloride/ *Kaliumchloried* YY (KCl)^Y (2)
- 3.3.3 Bromine / *Broom* (Br₂)^Y (2)
- [19]**

QUESTION 4/ VRAAG 4

- 4.1
- 4.1.1 Y Y (1)
- 4.1.2 Higher concentration of HCl YY (only conc)^Y YY (only temp)^Y (4)
Hoër konsentrasie van HCl
Hoër temperatuur van oplossing
- 4.2
- 4.2.1 Reversible reaction / *Omkeerbare reaksie* YY (2)
- 4.2.2 (-)1300 kJ YY (2)
- 4.2.3 Exothermic/ *Exotermies* Y (1)
 Heat is liberated/ ΔH is negative / *Warmte vrygestel/ ΔH is negatief.* YY (2)
- 4.2.4 INCREASES/ *NEEM TOE* YY (2)
- 4.2.5 DECREASES/ *NEEM AF* YY (2)
- 4.2.6 INCREASES/ *NEEM TOE* YY (2)
- 4.2.7 STAYS THE SAME/ *BLY DIESELFDE* YY (2)
- [20]**

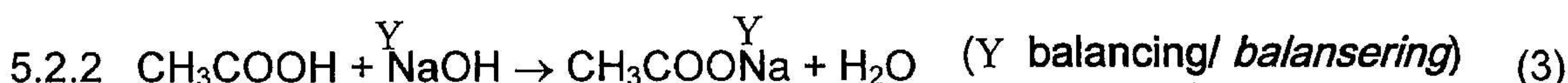
QUESTION 5/ VRAAG 5

5.1



5.2

5.2.1 undergoes partial dissociation / ondergaan gedeeltelike dissosiasie YY (2)



$$5.2.3 \quad n = cV = 0,1 \times 0,020 = 0,002 \text{ mol of NaOH} \quad (2)$$

5.2.4

$$\frac{c_a \times V_a}{c_b \times V_b} = \frac{n_a}{n_b} \quad \text{Y}$$

$$\frac{c_a \times 0,025}{0,1 \times 0,020} = \frac{1}{1} \quad \text{Y}$$

$$c_a = \frac{0,1 \times 0,020 \times 1}{0,025 \times 1}$$

$$c_a = 0,08 \text{ mol.dm}^{-3} \quad \text{Y}$$

or/of

$$n_a = n_b \quad \text{Y}$$

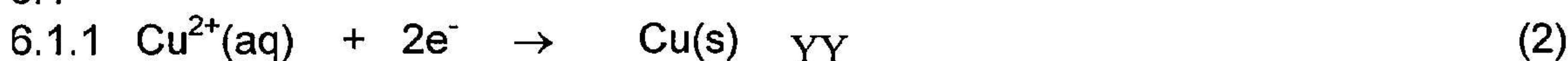
$$\therefore c_a = n/V = 0,002 / 0,025 = 0,08 \text{ mol.dm}^{-3} \quad \text{Y}$$

5.2.5 Phenolphthalein / *Fenolftaleien* YY (4)

(2)

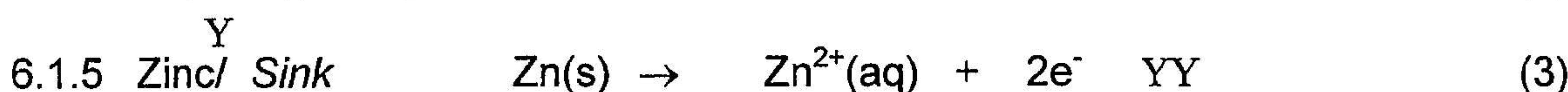
[18]**QUESTION 6/ VRAAG 6**

6.1



6.1.2 Oxidation/ *Oksidasie* YY (2)

6.1.3 ZnSO_4 YY (zinc sulphate Y)... or any other soluble zinc salt. (2)
(*sinksulfaat*) of enige ander oplosbare sink sout)



6.1.6 Chemical energy to electrical energy YY (2)
Chemiese energie na elektriese energie

6.2

**[18]**

QUESTION 7 /VRAAG 7

7.1

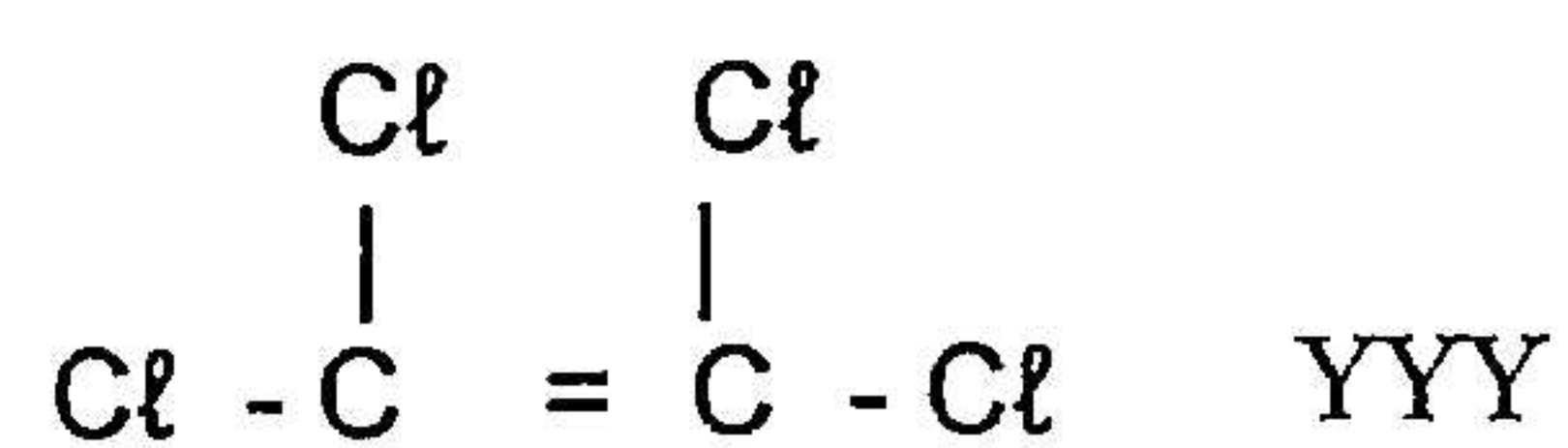
7.1.1 A & C YY (2)

7.1.2 B & D YY (2)

7.1.3 D YY (2)

7.2 but-2-ene YY (2)

7.3

(3)
[11]**150 marks/ punte**