GAUTENG DEPARTMENT OF EDUCATION
GAUTENGSE DEPARTEMENT VAN ONDERWYS
SENIOR CERTIFICATE EXAMINATION
SENIORSERTIFIKAAT-EKSAMEN

FUNCTIONAL PHYSICAL SCIENCE SG
FUNKSIONELE NATUUR- EN SKEIKUNDE SG
(Second Paper: Chemistry /
(Tweede Vraestel: Chemie)

POSSIBLE ANSWERS OCT / NOV 2006

QUESTION 1 / *VRAAG 1*

1.1	B	1.6	B	1.11	C	
1.2	C	1.7	D	1.12	A	
1.3	C	1.8	B	1.13	A	
1.4	B	1.9	D	1.14	C	
1.5	D	1.10	C	1.15	D	15x3=**[45]**

QUESTION 2 / *VRAAG 2*

2.1

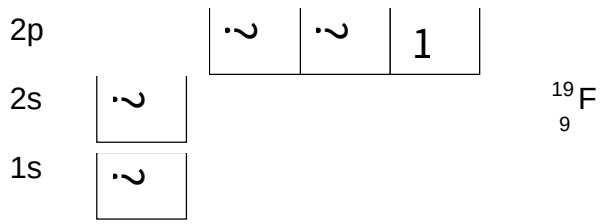
2.1.1 Fluorine / *fluoor* (2)

2.1.2 9 (2)

2.1.3 19 (2)

2.1.4 9e (2)

2.1.5



(3)

2.1.6 7 (2)

2.1.7 The valence electrons are the same. / *Hulle valenselektrone is dieselfde.* (2)

2.2

2.2.1 Their relative atomic mass differs. / *Hulle relatiewe atoommassas verskil.* (2)

2.2.2 $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$ (2)

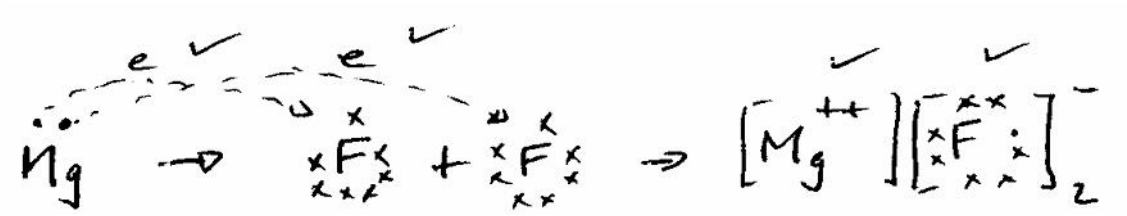
2.2.3 Ca^{2+} (2)

2.2.4 2 (2)
[23]

QUESTION 3 / *VRAAG 3*

3.1
3.1.1 Ionic / *Ioniese* (2)

3.1.2



(4)

3.1.3 Elektrostatic forces / *Elektrostatiese kragte* (2)

3.2

(3)

3.3 The ability of the atom to attract electrons. / *Die vermoë van ? atoom om gedeelde elektrone aan te trek.* (2)

3.4
3.4.1 Na – 0,9
Cl – 3,0
2,1 difference / *verskil*
67% ionic / *ionies* (2)
[15]

QUESTION 4 / *VRAAG 4*

4.1 A, D and / *en* E. (6)

4.2 B and / *en* C. (4)

4.3 D (2)

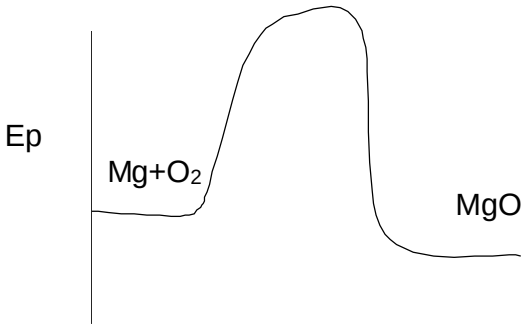
4.4 B (2)
[14]

QUESTION 5 / *VRAAG 5*

5.1 It is the minimum energy needed to start a reaction. / *Dit is die minimum energie nodig om ? reaksie te begin.* (2)

5.2 A reaction that absorbs net energy during chemical change.
? Reaksie wat energie opneem tydens chemiese verandering. (2)

5.3



(4)

5.4 The spark constitutes the activation energy for the reaction. / *Die vlammetjie stel die aktiveringsenergie vir die reaksie voor.* (2)

[10]

QUESTION 6 / *VRAAG 6*

6.1 (a) A high pressure.
? Hoë druk.
(b) Lower the temperature.
Temperatuur verlaag.
(c) Increase pressure.
Drukverhoging. any 2 of 3 (4)

6.2 At the optimum temperature the maximum NH_3 is formed. If the temperature is too low, the rate at which NH3 is formed is too slow. /
By ? optimum temperatuur word maksimum NH_3 gevorm. As temperatuur te laag is, is die tempo waarteen NH_3 vorm te stadig. (2)

6.3 To reach equilibrium sooner. / *Om ewewig gouer te bereik.* (2)

[8]

QUESTION 7 / *VRAAG 7*

7.1 A colour change from colourless to yellow. / *? Kleurverandering van kleurloos na geel vind plaas.* (2)

7.2 $2\ Br^- \rightarrow Br_2 + 2\ e$. (2)

7.3 $Cl_2 + 2e \rightarrow 2Cl^-$. (2)

7.4 No, no reaction. / *Nee, geen reaksie nie.* (2)

[8]

QUESTION 8 / *VRAAG 8*

8.1 (1) Salt bridge / *soutbrug*
(2) Copper electrode / *koperelektrode*
(3) Copper (II) sulphate / *koper (II) sulfaat*
(4) Zink (II) sulphate / *sink (II) sulfaat*
(5) Zink electrode / *sinkelektrode* (5)

8.2 $Cu^{2+} + 2\ e^- \rightarrow Cu$ (3)

8.3 $Zn \rightarrow Zn^{2+} + 2\ e^-$ (3)

8.4 Copper / *Koper* (1)
[12]

QUESTION 9 / *VRAAG 9*

9.1 The metal melts and forms a round ball that travels on the surface of the water.
Die metaal smelt, vorm ? balletjie, wat met ? sisgeluid oor oppervlak beweeg. (2)

9.2 Blue / *blou* (2)

9.3 2 Na + $2H_2O$? 2Na OH + H_2 (3)

9.4 Hydrogen / *waterstof* (2)
[9]

QUESTION 10 / *VRAAG 10*

10.1 Carbon dioxide and water / *Koolsuurgas en water.* (2)

10.2
10.2.1 Carbon tetrachloride / *Koolstoftetrachloried*. (2)

10.2.2 Ethanoic acid / *Asynsuur (etanoësuur)* (2)
[6]

TOTAL / *TOTAAL*: 150