

POSSIBLE ANSWERS FOR / MOONTLIKE ANTWOORDE VIR :

GAUTENGSE DEPARTEMENT VAN ONDERWYS
GAUTENG DEPARTMENT OF EDUCATION

SENIORSERTIFIKAAT-EKSAMEN
SENIOR CERTIFICATE EXAMINATION

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

VRAAG 1 / QUESTION 1

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

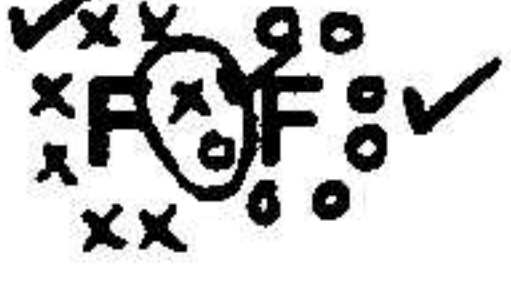
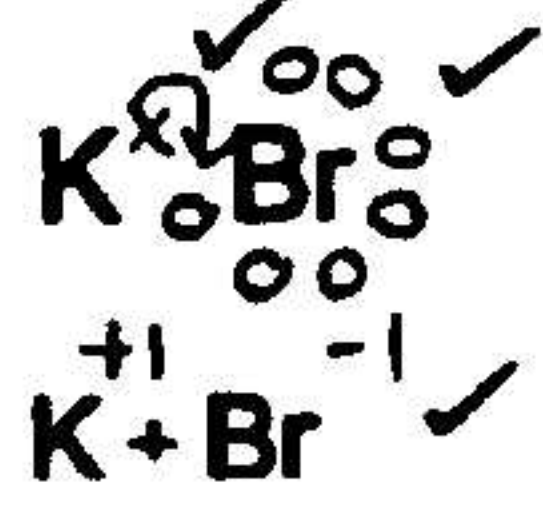
15x3=[45]

VRAAG 2 / QUESTION 2

- 2.1 2.1.1 'n Orbitaal is die mees waarskynlikste gebied of ruimte waar elektrone sal beweeg.
An orbital is the most likely region in the atom where electrons will be spinning or can be found. (3)
- 2.1.2 p-orbitaal (4)
- 2.2 2.2.1 Ca^{+2}
 F^{-1} (2)
- 2.2.2 CaF_2 (2)
- 2.2.3 *loniese / Ionic* (2)
- 2.3 2.3.1 b (2)
- 2.3.2 9 (2)
- 2.3.3 Die aantal elektrone wat 'n atoom sal afgee, of deel om met 'n ander atoom te verbind. Dit verwys na die elektrone in die buitenste kring.
The most loosely bound electrons that could be lost or shared when one atom combines with another. It refers to the electrons in the outermost shell. (2)
- 2.3.4 1 (2)
- 2.3.5 *chloor, broom, jodium*
chlorine, bromine, iodine (2)

[23]

VRAAG 3 / QUESTION 3

- 3.1 3.1.1  (3)
- 3.1.2  (3)
- 3.2 *By die fluoormolekule vind daar 'n binding plaas a.g.v. die oorvleueling van orbitale (deling van elektrone, dus is hy kovalent.)* (2)
 Bonding in F₂ a result of shared pair of electrons (2) between two atomic nuclei.
By die kaliumbromiedmolekuul is 'n binding wat ontstaan a.g.v. die oordrag van elektrone.
 In KBr there is a transfer of e⁻ from K to Br to form ions, which attract each other. (2)
- 3.3 F₂ nie-polêr molekules // non-polar F₂ molecules
 KBr die molekules is ionies – reuse struktuur
 the molecules are ionic in nature – giant structure (2)
 [12]

VRAAG 4 / QUESTION 4

- 4.1.1 *Die aantrekkingskrag tussen suurstofatome neem toe, atome beweeg nader aan mekaar en vorm vloeistof, a.g.v. tydelike dipole.*
 Under high pressure the molecules are forced closer together, low temperature, molecules have less motion allowing a liquid to form. (2)
- 4.1.2 *Tydlike dipole // temporary dipoles* (2)
- 4.2.1 C (2)
 4.2.2 A (2)
 4.2.3 B (2)
 [10]

VRAAG 5 / QUESTION 5

- 5.1 *Eksotermies// exothermic* (2)
- 5.2 *Energie van die reagense Mg en O₂ is hoër as die energie van die produkte // Energie vrygestel*
 Energy of the reactants Mg and O₂ are higher than the products // Energy is released during the reaction. (2)
- 5.3.1 D (2)
 5.3.2 C (2)
 [8]

VRAAG 6 / QUESTION 6

- 6.1 *Temperatuur // temperature*
Konsentrasie // concentration (4)
- 6.2 *Omdat die molhoeveelheid van die reagense gelyk is aan die molhoeveelheid van die produkte.*
The number of moles of the reactants are equal to the number of moles of products. (2)
- 6.3 *eksotermies // exothermic* (2)
- 6.4 *temperatuur van die reaksie word verhoog // temperature of reaction is increased.*
Verwyder H₂, verhoog [CO]
konsentrasie van die reagense te verhoog // concentration of the reactants is increased, remove H₂ or increase concentration of and [CO] (4)
[12]

VRAAG 7 / QUESTION 7

- 7.1 *reduksiereaksie is wanneer die atoom elektrone ontvang*
reduction is when an atom receives electrons (2)
- 7.2 $O_2 + 4e^- \rightarrow 2O^{2-}$ ($O_2 + 2e^- \rightarrow O^{2-}$) (3)
- 7.3 *Kalium // potassium* (2)
- 7.4 *Suurstof // oxygen* (2)
- 7.5 $4K + O_2 \rightarrow 2K_2O$ (2)
[11]

VRAAG 8 / QUESTION 8

- 8.1 *elektrodes // electrodes* (2)
- 8.2 *borreltjies ontwikkel // bubbles form* (2)
- 8.3 *chloorgas // chlorine gas* (2)
- 8.4 *anode // anode* (2)
- 8.5 *elektroplatering // electroplating* (2)
[10]

VRAAG 9 / QUESTION 9

- 9.1.1 $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$ (1 vir balansering.) (3)
9.1.2 $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$ (1 vir balansering.) (3)
- 9.2 *waterstofgas* // hydrogen gas (2)
9.3 *goeie reduseermiddel* // good reducing agent (2)
- [10]**

VRAAG 10 / QUESTION 10

- 10.1.1 *Etanoësuur* // etanoic acid $-\text{COOH}$ (3)
10.1.2 *Ethanol* // ethanol $-\text{OH}$ (3)
10.1.3 *Etyn* // ethyn $-\text{C} \equiv \text{C}-$ (3)
- [9]**
- TOTAAL / TOTAL: 150**