

POSSIBLE ANSWERS

FEB / MARCH 2007

Biology/HG/P2

2

Marking Guideline/

Senior Certificate Examination – Feb/Mar 2007

SECTION A

QUESTION 1

1.1

- 1.1.1 A✓✓
 - 1.1.2 C✓✓
 - 1.1.3 D✓✓
 - 1.1.4 C✓✓
 - 1.1.5 B✓✓
 - 1.1.6 C✓✓
 - 1.1.7 D✓✓
- (7x2) **(14)**

1.2

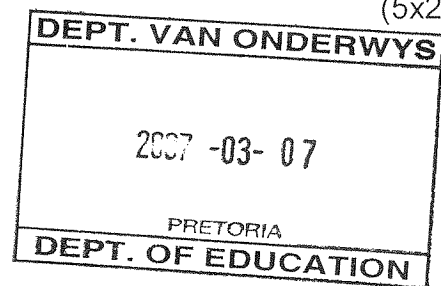
- 1.2.1 Lymph✓
 - 1.2.2 Turgor pressure✓
 - 1.2.3 Homeostasis✓
 - 1.2.4 Meninges✓
 - 1.2.5 Transpiration✓
 - 1.2.6 Diabetes mellitus✓
- (6)**

1.3

- 1.3.1 Both A and B / A and B✓✓
 - 1.3.2 None✓✓
 - 1.3.3 Both A and B / A and B✓✓
 - 1.3.4 Both A and B / A and B✓✓
 - 1.3.5 B only / B✓✓
- (5x2) **(10)**

1.4

- 1.4.1 Guttation✓
 - 1.4.2 -High humidity✓
-Low light intensity✓
-High concentration of soil water✓
-Low temperature ✓
-Closed stomata ✓
 - 1.4.3 -Seal the bell jar with vaseline,✓ to prevent any loss of water vapour.✓
-Allow apparatus to stand over-night in a warm place, ✓ to allow air in the bell jar to become saturated with water vapour.✓
-Water plants✓ well✓ /ensure✓a good supply of soil water. ✓
- (Mark first 2 answers only) **(2)**
- (Mark first 2 answers only) (2 x 2) **(4)**



- 1.4.4 -Xylem sap will not be able to escape✓
- will fill air space of leaves✓
- gaseous exchange will be difficult✓
- causing death✓

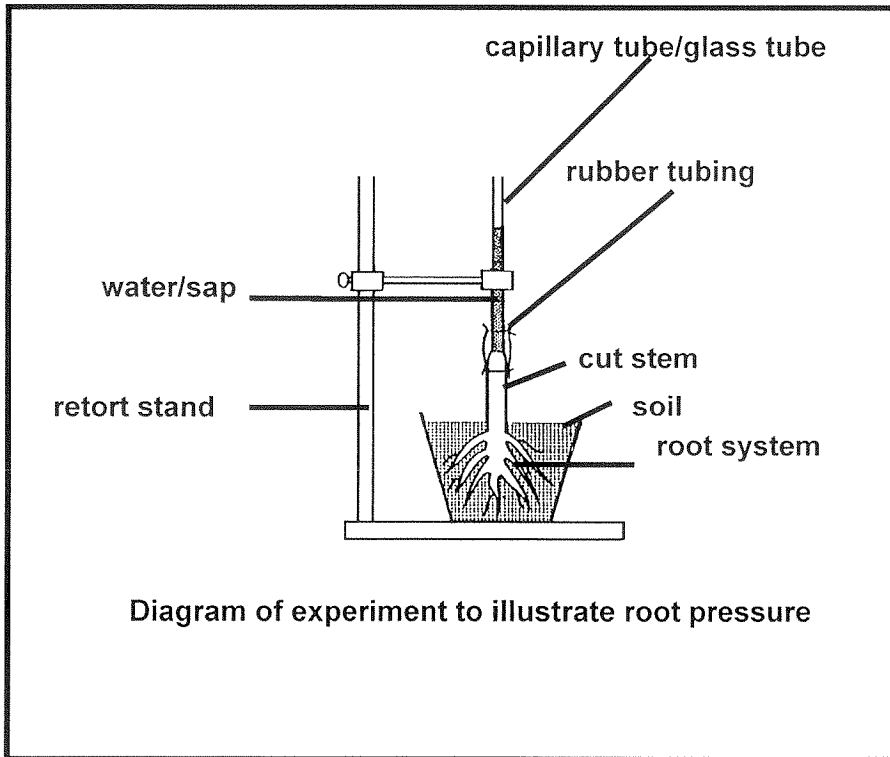
(Any 3)

OR

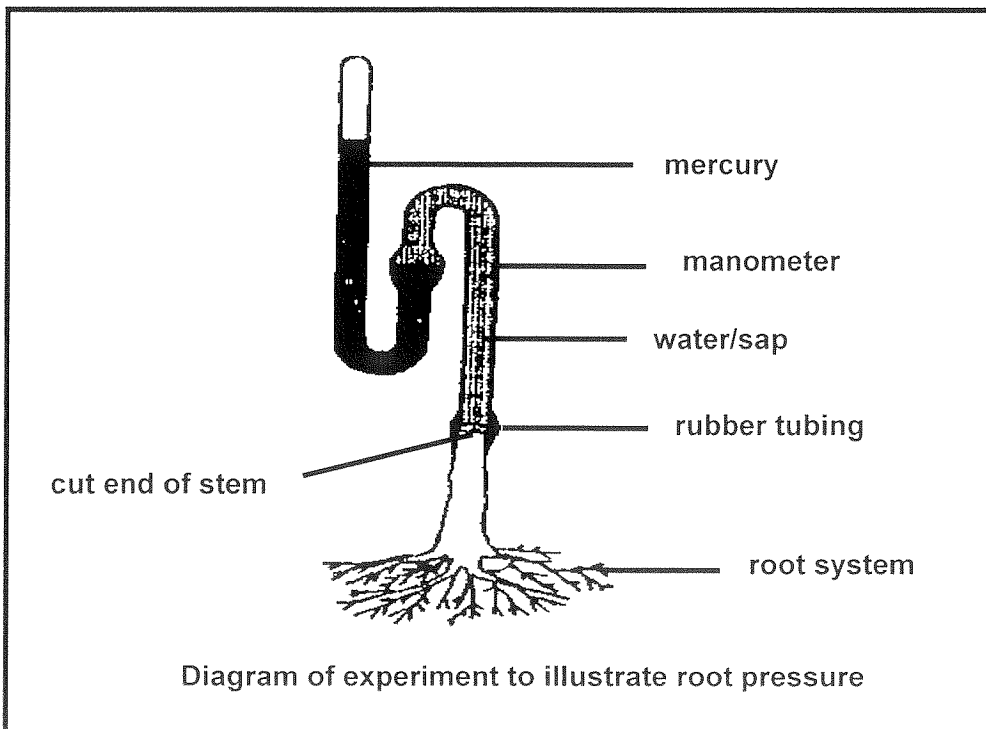
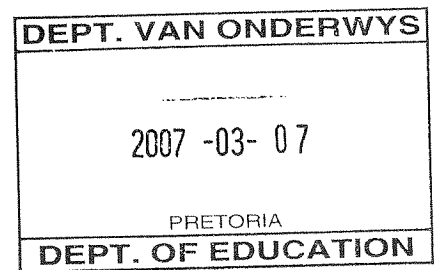
- No further✓
- upward movement of water✓
- mineral salts will not be transported to the leaves✓

(3)

1.4.5



OR



- Quality of lines: (1)
- Correct drawing: (1)
- Cut end of stem (1)
- Any four labels: (4)

(7)
(17)

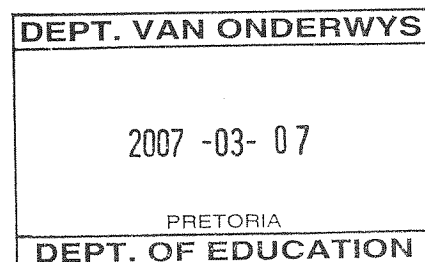
1.5

- 1.5.1 - Eustachian tube would become blocked with mucus because of cold ✓
 - air cannot be taken in / released through the Eustachian tube ✓
 - to equalize pressure on either side of ear drum ✓
 - water depth would increase pressure on the outside of eardrum ✓
 - causing it to be damaged. ✓ (Any 3) (3)
- 1.5.2 Nerve impulses would not be transmitted ✓ to the brain leading to deafness ✓ (2)
(5)

1.6

- 1.6.1 10^{-1} / 0,1 ✓ parts per million ✓ (2)
- 1.6.2 10^{-3} / 0,001 ✓ parts per million ✓ (2)
- 1.6.3 - At the tip of the root ✓
 - and that of the shoot ✓ (2)
- 1.6.4 - Auxins in the tip of the main shoot move down to the side branches/lateral buds/axillary buds ✓
 - where the higher concentration of auxins will inhibit and slow down the growth of these side branches/lateral buds/axillary buds ✓
 - while the main shoot grows much more strongly ✓ (Any 2) (2)
(8)

TOTAL QUESTION 1: 60
TOTAL SECTION A: 60

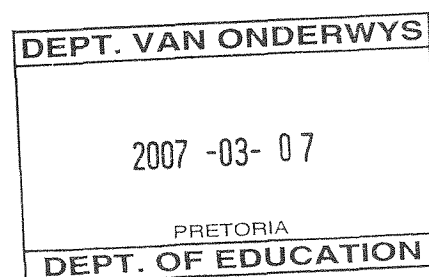


QUESTION 2**2.1**

- 2.1.1 - pH✓
 - Water concentration✓
 - Oxygen concentration✓
 - CO₂ concentration✓
 - Glucose✓
 - Temperature ✓ **(Mark first 4 answers only)** (4)
- 2.1.2 -There was no external✓ or internal temperature
 - change. ✓
 -The person was in a temperature - controlled room at 39 °C. ✓ (3)
- 2.1.3 -When the temperature of the hypothalamus decreases, ✓
 -sweat secretion decreases(or vice versa). ✓ (2)
- 2.1.4 Sweat production is controlled ✓ by the hypothalamus. ✓
(Mark first answer only) (2)
(11)

2.2

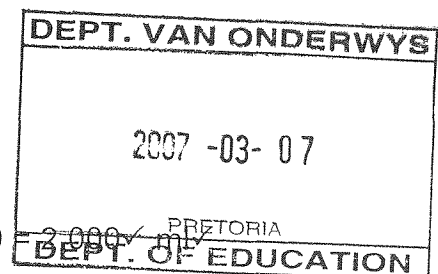
- 2.2.1 - A heat exchange mechanism exists at the base of a fin ✓
 - Arterioles and venules lie close to each other✓
 - Heat is transferred from the warm arterial blood entering the fin ✓
 - to the cold venous blood returning from the fin ✓
 - so that little heat reaches the fin ✓
 - that is exposed to the cold the environment ✓
 - therefore little heat is lost to the environment ✓ (Any 4) (4)
- 2.2.2 (a) Cooling✓ (1)
- (b) -When the body temperature rises✓
 -the sweat glands become more active✓
 -causing more sweat to be produced✓
 -this sweat evaporates✓resulting in cooling (Any 3) (3)
(8)



- 2.3
- Sensitive hair cells found in ampullar **cupulae**✓
 - at the base of the semi – circular canals ✓
 - and **otoliths** found in **maculae**✓
 - of the **sacculus** and **utricle**✓
 - are responsible for equilibrium✓
 - and register the position and movement of the head in any direction✓
 - Impulses are generated and transmitted to the cerebellum✓
 - The cerebellum also receives impulses from proprioceptors✓
 - in the muscles and joints✓
 - and reacts to the tension or tonus of the muscles✓
 - by transmitting the information to the cerebrum✓
 - which brings about a co-ordinated reaction✓
 - enabling person to maintain balance and body position.✓ (Any 8) **(8)**
- 2.4
- 2.4.1 Enlarged / swollen thyroid gland/decreased metabolic rate✓ (1)
(Mark first answer only)
- 2.4.2
- cuboidal epithelium is narrower/cells are smaller✓ (2)
 - cavity of a sick cat is wider✓ **(Mark first 2 answers only)**
- 2.4.3
- glands has no ducts✓
 - to transport secretion from duct
 - Therefore secretion to enter capillaries✓
 - to be transported away ✓ (3)
- 2.4.4
- Constituent of thyroxin ✓
 - thyroxin required for efficient metabolism✓ (2)
- TOTAL QUESTION 2: 35**

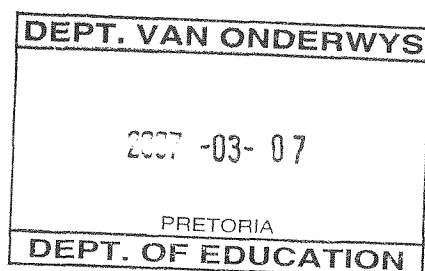
QUESTION 3

- 3.1 Excretion :- removal✓ of metabolic waste products✓
- Secretion: – the release✓ of useful substances✓ such as hormones from specialized cells in the body. (4)
- 3.2
- 3.2.1 C – proximal convoluted tubule✓
- D – Collecting duct / duct of Bellini✓ (2)
- 3.2.2 Amount excreted: 180 000 - 178 000 ~~2 000~~ ml✓ (2)
- 3.2.3 A✓ (1)



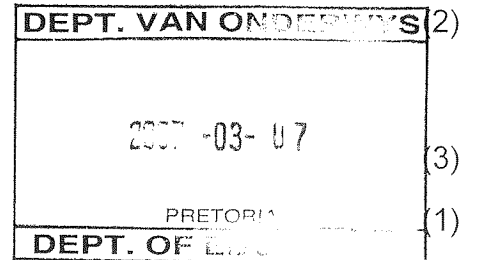
- 3.2.4
- (a) - Glucose is small enough✓
to filter through the glomerular membrane ✓
and is therefore found in the Bowman's capsule cavity. (2)
- (b) - All✓ glucose is reabsorbed
- from the filtrate✓
in the proximal convoluted tubule / back into the blood capillaries ✓
(Any 2) (2)
- 3.2.5 -Afferent arteriole wider than efferent-✓
pressure in glomerulus.✓
-Cup-shaped✓
large surface area.✓
-Thin walled/epithelial cells ✓
easy passage ✓
-Podocytes/filtration slits ✓
to filter plasma ✓
-Capillaries and Bowmans capsule in close contact ✓
quick movement ✓ **Mark first 3 answers only** (3 x 2) (6)
- 3.2.6 - a decrease in temperature✓ due to cooling
- will slow down enzyme action in cells lining the tubule✓
- therefore respiration is slowed down✓
- a very little energy✓ released for reabsorption✓
- as a result, useful substances will be present in urine✓ (Any 5) (5)
(20)
- 3.3 -less ADH produced✓
-walls of collecting tubules less permeable✓
-less water reabsorbed into medulla✓
-dilute / more urine produced/water lost in urine✓ (4)
- 3.4 3.4.1 -Blood pressure drops✓
-insufficient pressure is present in the glomerulus✓
-little filtration takes place✓
-little nitrogenous waste removed✓ (Any 3) (3)
- 3.4.2 (a) -a person would be free to move about✓
without having to go for dialysis every few days✓
(b) **(Mark first answer only)** (2)
-there is always a danger✓ of organ rejection✓
after a kidney transplant
(Mark first answer only) (2)
(7)

TOTAL QUESTION 3: 35



QUESTION 4**4.1**

- 4.1.1 At about 12h00✓ (1)
- 4.1.2 -Cell wall pressure highest✓
-thick walls of guard cells move apart✓
OR
Photosynthesis greater at this time✓
need to get more carbon-dioxide in✓
- 4.1.3 -This being the warmest part of the day✓
-the plant will lose a lot of water✓
-which may cause wilting✓ (3)
- 4.1.4 -B✓ (1)
- 4.1.5 -Cell is bean-shaped ✓
allowing existence of opening ✓ between two cells
-Mitochondria✓ in which energy is released
for active movement of potassium ✓
-The guard cells have uneven cell walls/the inner wall is thicker and
the outer wall is thinner/inner and outer walls differ in elasticity✓
which facilitate the opening and closing of the stoma✓

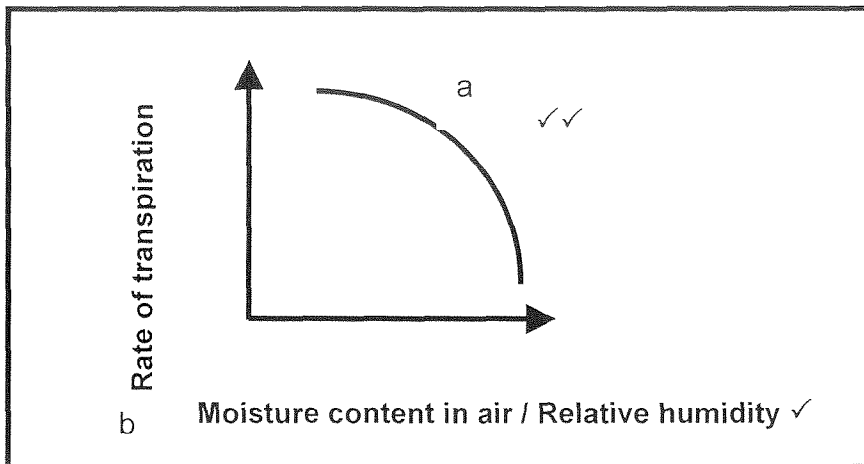


(Mark first 2 answers only) (2 x 2) (4)
(11)

4.2

- 4.2.1 To investigate the effect of different environmental factors✓ on the
rate of transpiration/water absorption✓ (2)
- 4.2.2 -The leafy area ✓ of all twigs should be approximately the same✓
-all twigs ✓ from the same kind of plant ✓
-use a number of set-ups✓ and take average of readings ✓
(Mark first answer only) (1 x 2) (2)
- 4.2.3 Results
- (a) Cylinder A = 45 ml✓ (1)
(b) Cylinder B = 40 ml✓ (1)
(c) Cylinder C = 35 ml✓ (1)
(d) Cylinder D = 38 ml✓ (1)
- 4.2.4 -Hairs reduce transpiration by trapping the water vapour ✓
-layer becomes saturated with water vapour✓
-less water vapour diffuses through stoma to the outside✓
(Any 2) (2)

4.2.5



- (c) -as the plant transpires ✓
 -the moisture content in the bag increases ✓
 -this lowers the concentration gradient between the water vapour molecules within the leaf and the air within the plastic bag ✓
 -reducing the rate of transpiration ✓ (Any 3) (3)
(16)

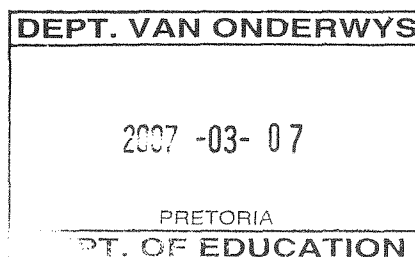
4.3

- 4.3.1 Osmosis ✓ (1)
- 4.3.2 (a) C ✓ (1)
 (b) A ✓ (1)
- 4.3.3 - higher Ψ in the surrounding/lower water potential in dialysis tubing ✓ (2)
 - therefore gains most water ✓ by endosmosis (5)

4.4

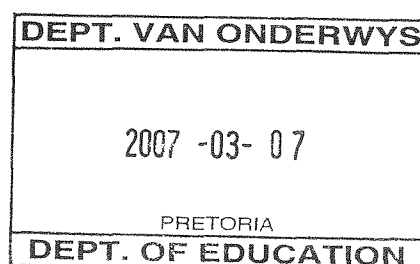
- Have a large lumen ✓
 - Vessels and tracheids are non-living / dead tubes ✓
 - Walls are impregnated with lignin ✓
 - Have pits ✓
 - Have perforated cross walls ✓
- (Mark first 3 answers only) (3)

TOTAL QUESTION 4: 35
 TOTAL SECTION B: 105



SECTION C**QUESTION 5****5.1**

- 5.1.1 P✓ (1)
- 5.1.2 -The pupil is opened much wider at night✓
-to allow as much light as possible to enter the eye✓ (2)
- 5.1.3 -Sympathetic part ✓ of the autonomic nervous system causes the radial muscles in iris to contract, ✓
-to enlarge the pupil✓ (Any 2)
- While the parasympathetic part✓ will cause the circular muscles in the iris to contract, ✓
making the pupil smaller. ✓ (Any 2) (4)
- 5.1.4 - Good sense of smell✓
in order to detect the prey before they see it✓
- Acute sense of hearing✓
to hear danger / predators approaching✓
(Mark first 2 answers only) (2 x 2) (4)
- 5.1.5
- (a) Pressure builds up in it✓ (1)
- (b) The patient will become blind✓✓ / makes retina to appear paler ✓, causing its starvation and death ✓ (2)
- (c) No✓ (1)
- (d) The image of an approaching car from a side street would fall outside the yellow spot✓
which is damaged by glaucoma✓ (2)
- (17)**



5.2

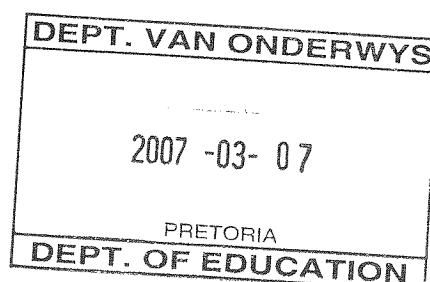
- Accommodation takes place✓
- Eye was adjusted✓
- for far vision✓
- with lens less convex✓
- for gradual refraction of light✓
- to focus object on retina✓
- the eye had to be ready for near vision✓
- this adjustment takes a short while✓
- from blurred to clear image as follows:
- ciliary muscle✓
- in ciliary body✓
- contracted✓
- causing suspensory ligaments✓
- to slacken✓
- decreasing tension✓
- on elastic✓
- lens✓
- hence lens becomes more convex✓
- to increase refractive power✓
- light rays bent more✓
- to focus image on the retina. ✓

Marks	Level descriptions
0	Did not attempt the answer.
1	Poor structuring of the answer with significant gaps in the knowledge of the concepts of accommodation of the eye.
2	The answer is structured in a superficial way, using some of the relevant concepts. There may be some gaps of knowledge of concepts. The functioning of the various parts have been included as an add on (separated from the causes and effects leading to the accommodation of the eye)
3	The answer is well structured, and logically describes the causes and effects leading to accommodation of the eye, together with the associated concepts. The key concepts are explained in such a way that the answer demonstrates an insight and understanding of the relevant subject content/question.

Factual content: 15
Synthesis: 3
18

TOTAL QUESTION 5: 35
TOTAL SECTION C: 35

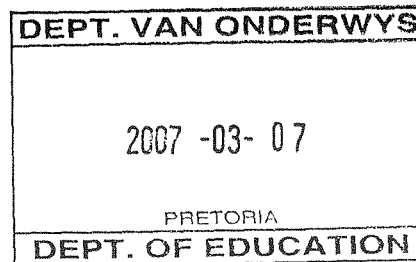
GRAND TOTAL: 200



AFDELING A

VRAAG 1

- | | | | | |
|------------|-------|--|--|--------------------|
| 1.1 | 1.1.1 | A ✓✓ | | |
| | 1.1.2 | C ✓✓ | | |
| | 1.1.3 | D ✓✓ | | |
| | 1.1.4 | C ✓✓ | | |
| | 1.1.5 | B ✓✓ | | |
| | 1.1.6 | C ✓✓ | | |
| | 1.1.7 | D ✓✓ | (7x2) | (14) |
|
 | | | | |
| 1.2 | 1.2.1 | Limf ✓ | | |
| | 1.2.2 | Turgordruk ✓ | | |
| | 1.2.3 | Homeostase ✓ | | |
| | 1.2.4 | Meninges / breinvliese ✓ | | |
| | 1.2.5 | Transpirasie ✓ | | |
| | 1.2.6 | Diabetes mellitus / suikersiekte ✓ | | (6) |
|
 | | | | |
| 1.3 | 1.3.1 | Biede A en B / A en B ✓✓ | | |
| | 1.3.2 | Geen ✓✓ | | |
| | 1.3.3 | Biede A en B / A en B ✓✓ | | |
| | 1.3.4 | Biede A en B / A en B ✓✓ | | |
| | 1.3.5 | Slegs B / B ✓✓ | (5x2) | (10) |
|
 | | | | |
| 1.4 | 1.4.1 | Guttasie ✓ | | (1) |
| | 1.4.2 | - Hoë humiditeit ✓
- Lae ligintensiteit ✓
- Hoë konsentrasie grondwater ✓
- Lae temperatuur ✓
- Stomata wat toe is ✓ | | (2) |
| | 1.4.3 | - Seël die klokfles met Vaseline ✓
om enige verlies van waterdamp te voorkom ✓
- Laat apparaat oornag in 'n warm plek staan ✓
sodat lug in klokfles met waterdamp versadig raak ✓
- Maak plant goed nat / verseker voldoende voorsiening ✓
met water / van grondwater ✓ | (Merk slegs eerste 2 antwoorde) | (2 x 2) (4) |



- 1.4.4 - Xileemsap sal nie kan ontsnap nie ✓
- Sal lugruimte oor blare vul ✓
- Gaswisseling sal moeilik wees ✓
- en kan dood veroorsaak ✓

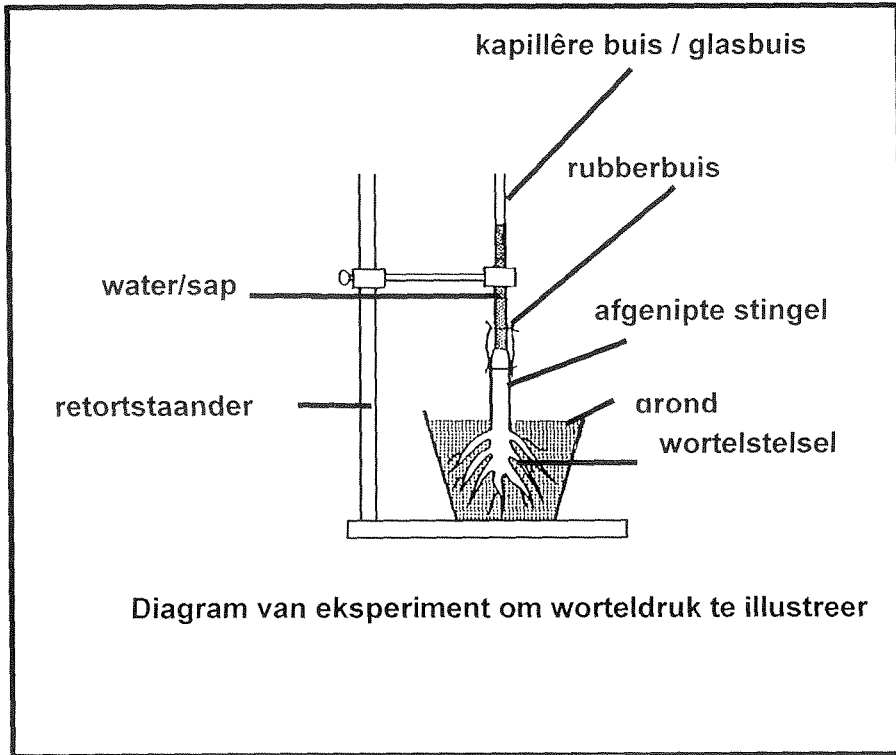
(Enige 3)

OF

- Geen verdere ✓
- opwaartse beweging van water ✓
- Mineraalsoute sal nie na die blare vervoer word nie ✓

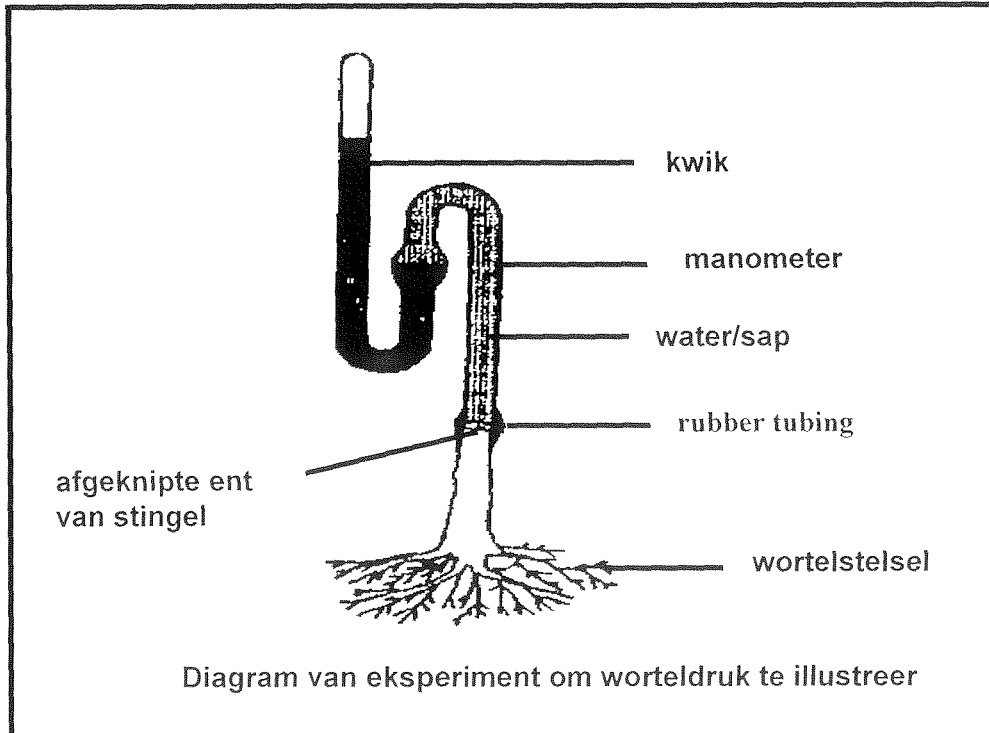
(3)

1.4.5



OF

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 2007 -03- 07
 PRETORIA
 DEPT. OF EDUCATION



- Kwaliteit van lyne: (1)
- Korrekte diagram: (1)
- Afgeknipte stingelent (1)
- Enige 4 byskrifte: (4)

(7)
(17)

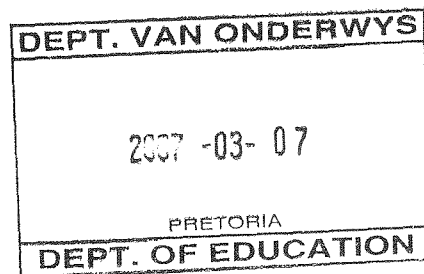
1.5

- 1.5.1 - Buis van Eustachius sal met slym verstop word a.g.v. verkoue ✓
 - Lug kan nie in of uit buis van Eustachius beweeg nie ✓
 - om lugdruk aan weerskante van timpanum gelyk te maak nie ✓
 - Waterdiepte sal druk aan buitekant van timpanum laat toeneem ✓
 - en die timpanum kan beskadig ✓ word (Enige 3) (3)
- 1.5.2 - Senuwee-impulse sal nie na die brein gelei word nie ✓
 - wat tot doofheid sal lei ✓ (2)
(5)

1.6

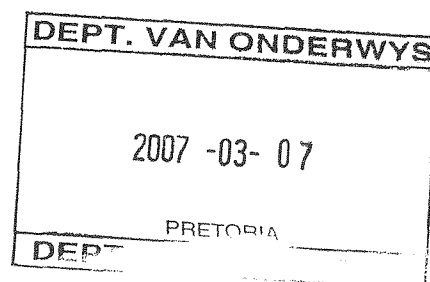
- 1.6.1 10^{-1} / 0,1 ✓ dele per miljoen ✓ (2)
- 1.6.2 10^{-3} / 0,001 ✓ dele per miljoen ✓ (2)
- 1.6.3 - Aan die punt van die wortel ✓
 - en dié van die stingel ✓ (2)
- 1.6.4 - Ouksiene in die punt van die stingel beweeg af na die
 sytakke/laterale knop ✓
 - waar die hoër ouksienkonsentrasie die groei van hierdie
 sytakke/laterale knop inhibeer en vertraag ✓ (2)
 - terwyl die hoofstingel baie sterker groei ✓ (Enige 2) **(8)**

TOTAAL VRAAG 1: 60
TOTAAL AFDELING A: 60



VRAAG 2

- 2.1 2.1.1 - pH ✓
- Waterkonsentrasie ✓
- Suurstofkonsentrasie ✓
- CO₂-konsentrasie ✓
- Glukose ✓
- Temperatuur ✓ **(Merk slegs eertse 4 antwoorde)** (4)
- 2.1.2 - Daar was geen eksterne ✓ of interene
- temperatuurverandering ✓ nie
- Die persoon was in 'n temperatuurbeheerde kamer van 39 °C. ✓ (3)
- 2.1.3 - Wanneer die temperatuur van die hipotalamus afneem ✓
- neem sweetsekresie ook af ✓ (of omgekeerd) (2)
- 2.1.4 - Sweetproduksie word deur die hipotalamus ✓
beheer ✓ **(Merk slegs die eerste antwoord)** (2)
(11)
- 2.2 2.2.1 - 'n Hitte-uitruilingsmeganisme bestaan aan die basis van die vin ✓
- Die arteriole en aartjies lê naby aan mekaar
- waar hitte oorgedra word vanaf die warm arteriële bloed wat na
vin vloei ✓
- na die koue veneuse bloed wat vanaf die vin terugkeer ✓
- sodat min hitte die vin bereik ✓
- wat aan die koue omgewing blootgestel is ✓ (4)
- en gevolglik word min hitte aan die atmosfeer verloor ✓ (Enige 4)
- 2.2.2 (a) Afkoeling ✓ (1)
- (b) - Wanneer die liggaamstemperatuur styg ✓
- raak die sweetkliere meer aktief ✓
- en sodoende word meer sweet geproduseer ✓
- wat dan verdamp ✓ en afkoeling veroorsaak (Enige 3) (3)
(8)



- 2.3
- Sensitiewe haarselle in die **kupulas** ✓ van die ampullas
 - wat aan die basis van die halfsirkelvormige kanale ✓ voorkom
 - en die **otoliete** in die **makulas** ✓
 - wat in die **sakkulus** en **utrikulus** ✓ voorkom
 - is verantwoordelik vir liggaamsewig ✓
 - en registreer die posisie en beweging van die kop in enige rigting ✓
 - Impulse word opgewek en na die serebellum gelei ✓
 - Die serebellum ontvang ook impulse vanaf die proprioseptore ✓
 - wat in die spiere en gewrigte geleë is ✓
 - en reageer op die spanning of tonus van die spiere ✓
 - deur die inligting na die serebrum te stuur ✓
 - wat dan 'n gekoördineerde reaksie teweegbring ✓
 - wat die persoon in staat stel om balans en liggaamsposisie te handhaaf ✓
- (Enige 8) (8)

2.4

2.4.1 Vergrootte / Geswelde tiroïedklier/afname in metaboliese tempo (1)
(Merk slegs eerste antwoord)

2.4.2

- Kubiese epiteel is dunner/selle kleiner ✓
- Holte by die siek kat is wyer / groter ✓

(2)
(Merk slegs die eerste 2 antwoorde)

2.4.3

- klier is buisloos ✓ en kan nie sekresie vanaf klier vervoer nie
- sekresie moet kapillêres binnegaan ✓
- om weg vervoer te word ✓

(3)

2.4.4

- Bestanddeel van tiroksien ✓
- Tiroksien benodig vir effektiewe metabolisme ✓

(2)
(8)

TOTAAL VRAAG 2: 35

VRAAG 3

3.1 Ekskresie :- Verwydering ✓ van metaboliese afvalstowwe ✓

Sekresie:- Vrystelling ✓ van nuttige stowwe ✓ soos hormone (4)

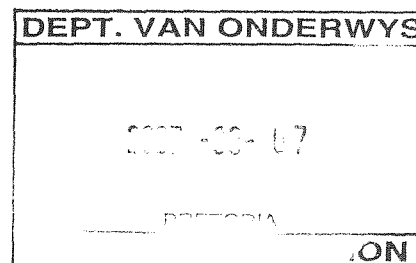
3.2

3.2.1 C – Proksimale kronkelbuis ✓

D – Versamelbuis / buis van Bellini ✓ (2)

3.2.2 180 000 - 178 000 = 2 000 ✓ ml ✓ (2)

3.2.3 A ✓ (1)

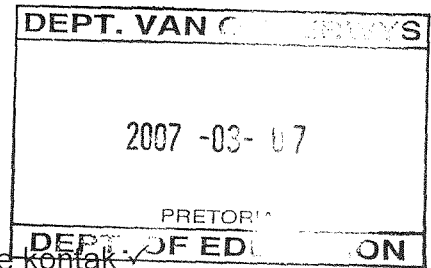


3.2.4

- (a) - Glukose is klein genoeg ✓
om deur die glomerulêre membraan te filtreer ✓
en daarom kom dit in die holte van die kapsel van Bowman voor (2)
- (b) - Alle glukose ✓
- word uit die proksimale buis / terug in die bloedkapillêres ✓
uit die filtraat herabsorbeer ✓ (Enige 2) (2)

3.2.5

- Afferente arteriool is wyer as die efferente arteriool ✓
en druk ontstaan in glomerulus ✓
- Koppievromig ✓
en stel dus groot oppervlakte beskikbaar ✓
- Dunwandig / epiteelselle ✓
vir maklike deurgang van stowwe ✓
- Podosiete / filtrasiesplete kom voor ✓
om plasma te filtreer ✓
- Kapillêres en kapsel van Bowman is in noue kontak ✓
vir vinnige beweging ✓ van stowwe



(Merk slegs eerste 3 antwoorde) (3 x 2) (6)

3.2.6

- 'n Daling in temperatuur ✓ a.g.v. afkoeling
 - sal ensiemwerking in selle van voering van buisie vertraag ✓
 - en respirasie vind stadiger plaas ✓
 - sodat baie min energie vrygestel word ✓
 - vir herabsorpsie ✓
 - en gevolglik sal nuttige stowwe in uriene voorkom ✓ (Enige 5) (5)
- (20)**

3.3

- Minder ADH geproduseer ✓
- Wande van versamelbuisie minder deurlaatbaar vir water ✓
- en minder water word na die medulla herabsorbeer ✓
- en verdunde / meer uriene geproduseer / water gaan in uriene verlore ✓ (4)

3.4

- 3.4.1
- Bloeddruk daal ✓
 - onvoldoende druk in glomeruls ✓
 - Min filtrasie vind plaas ✓
 - en minder stikstofafval word verwyder ✓ (Enige 3) (3)

3.4.2

- (a) - Persoon sal vryelik kan rondbeweeg ✓
sonder om vir 'n paar dae vir dialise te gaan ✓
(Merk slegs eerste antwoord) (2)
 - (b) - Daar is altyd die gevaar ✓
van organverwering ✓
(Merk slegs eerste antwoord) (2)
- (7)**

TOTAAL VRAAG 3: 35

VRAAG 4

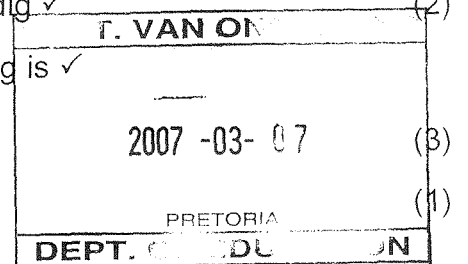
4.1 4.1.1 Teen ongeveer 12h00 ✓ (1)

- 4.1.2 - Selwanddruk is hoog ✓
- en dik wande van sluitselle beweeg weg van mekaar ✓

OF

- Hoër tempo van fotosintese teen hierdie tyd ✓
en meer koolstofdioksied word dan benodig ✓ (2)

- 4.1.3 - Aangesien dit die warmste tyd van die dag is ✓
- sal die plant baie water verloor ✓
- wat verwelking kan veroorsaak ✓



4.1.4 - B ✓ (1)

- 4.1.5 - Sel is boontjievormig ✓
en maak bestaan van opening ✓ tussen twee selle moontlik
- Mitochondria ✓ waarin energie vrygestel word
vir aktiewe beweging van kaliumione ✓
- Sluitselle het oneweredigverdikte wande / die binnewand is dikker
en die buitewand is dunner /die binnewande en buitewande
verskil in elastisiteit ✓
- wat die oopmaak en toemaak van die stoma bevorder ✓

(Merk slegs die eerste 2 antwoorde) (2 x 2) (4)
(11)

4.2

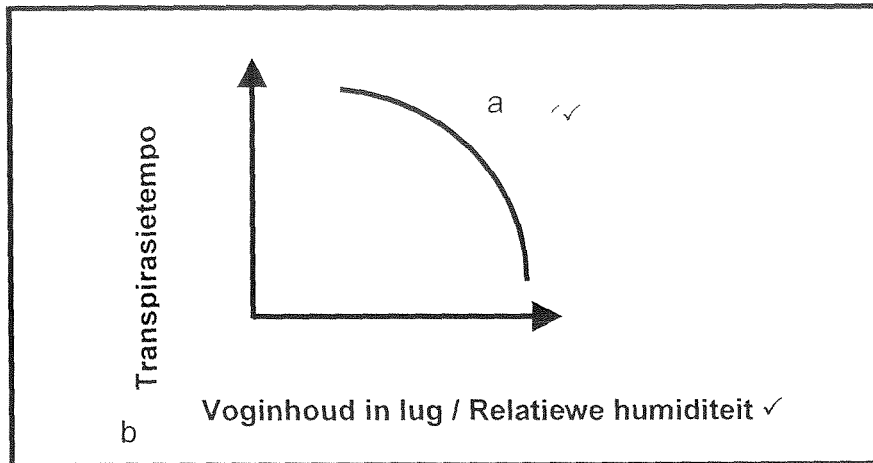
- 4.2.1 - Om die uitwerking van verskillende omgewingsfaktore ✓
- op die tempo van transpirasie / absorpsie van water te
ondersoek ✓ (2)

- 4.2.2 - Die blaararea ✓ van al die stingels
moet min of meer dieselfde wees ✓
- Alle stingels ✓
moet van dieselfde tipe plant wees ✓
- Gebruik 'n aantal opstellings ✓
en gebruik die gemiddelde van die lesings ✓
(Merk slegs eerste antwoord) (1 x 2) (2)

- 4.2.3 Resultate
- (a) Silinder A = 45 ml ✓ (1)
 - (b) Silinder B = 40 ml ✓ (1)
 - (c) Silinder C = 35 ml ✓ (1)
 - (d) Silinder D = 38 ml ✓ (1)

- 4.2.4 - Hare verminder transpirasie deur waterdamp vas te vang ✓
- Blare raak versadig met waterdamp ✓
- Minder waterdamp diffundeer deur die stomata na buite ✓
(Enige 2) (2)

4.2.5



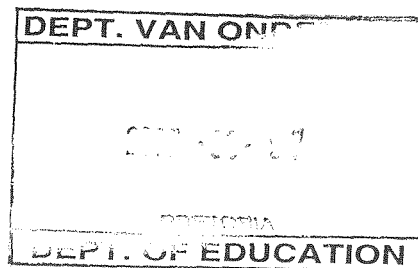
- (c) - Soos die plant transpireer ✓
 - neem die voginhoud in die plastieksak toe ✓
 - wat die konsentrasiegradiënt tussen die waterdampmolekules binne die blaar en die lug in die plastieksak verlaag ✓
 - en die transpirasietempo neem af. ✓ (Enige 3) (3)
(16)

4.3

- 4.3.1 Osmose ✓ (1)
- 4.3.2 (a) C ✓ (1)
 (b) A ✓ (1)
- 4.3.3 - Hoër Ψ buite / laer Ψ in dialisebuis ✓
 - daarom grootste wins aan water ✓ deur endosmose (2)
(5)

- 4.4 - Het 'n groot lumen ✓
 - Vate en trageïede is nie-lewend / dooie buise ✓
 - Wande met lignien ✓ geïmpregneer
 - Het stippels ✓
 - Het geperforeerde dwarswande ✓ (**Merk slegs eerste 3 antwoorde**) (3)
(3)

TOTAAL VRAAG 4: 35
 TOTAAL AFDELIN B: 105

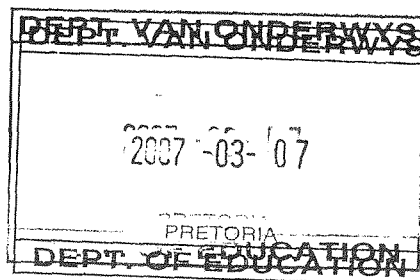


AFDELING C

VRAAG 5

5.1

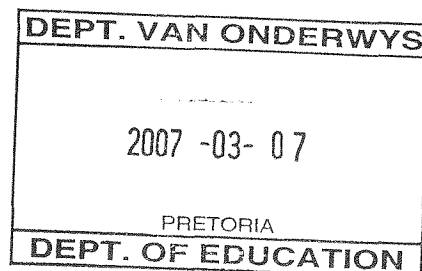
- 5.1.1 P✓ (1)
- 5.1.2 - Die pupil is baie wyer oop snags ✓
- om soveel lig as moontlik binne te laat ✓ (2)
- 5.1.3 - Simpatiese deel ✓ van outonome senuweestelsel veroorsaak dat
- die radiale spiere in die iris saamterk ✓
- om die pupil te vergroot ✓ (Enige 2)
- terwyl die parasimpatiese ✓ deel
- versak dat die kringspiere saamterk ✓
- om die pupil kleiner te maak ✓ (Enige 2) (4)
- 5.1.4 - Goeie reuksin ✓
om prooi waar te neem voordat prooi jagter waarneem ✓
- Skerp gehoorsin ✓
om gevaar / naderende prooi waar te neem ✓
(Merk slegs eerste 2 antwoorde) (2 x 2) (4)
- 5.1.5
- (a) Druk ontstaan binne-in ✓ (1)
- (b) Die pasiënt sal blind word ✓✓ / maak dat retina bleker voorkom ✓, en lei tot voedselnoed en dood van retinaselle ✓ (2)
- (c) Nee ✓ (1)
- (d) - Die beeld van die naderende motor sal nie op die geelvlak val nie ✓
- omdat die gloukoom dit beskadig het ✓ (2)
- (17)**



5.2

- Akkommodasie vind plaas ✓
- Oog is aangepas ✓
- vir ver visie ✓
- met die lens wat minder konveks is ✓
- vir geleidelike refraksie van lig ✓
- Om die voorwerp op die retina te fokus ✓
- moet die oog aanpas vir naby visie ✓
- Hierdie aanpassing neem 'n kort rukkie ✓ soos volg:
- Die siliaarspier ✓
- in die siliaarliggaam ✓
- trek saam ✓
- en veroorsaak verslapping ✓
- van die suspensoriese ligamente ✓
- wat die spanning ✓
- op die elastiese ✓
- lens ✓ laat afneem
- daarom raak die lens meer konveks ✓
- om sy brekingskrag ✓ te vergroot
- Ligstrale buig meer ✓
- om die beeld op die retina te fokus ✓

Punte	Vlakbeskrywings
0	Het nie die antwoord aangedurf nie.
1	Swak strukturering van die antwoord met aansienlike gapings in die kennis van die konsepte van die akkommodasie van die oog.
2	Die antwoord is oppervlakkig gestruktureer, waar sommige relevante konsepte gebruik is. Daar mag gapings van die kennis van konsepte wees. Die werking van verskeie dele is terloops bygevoeg (geskei van die oorsake en gevolge wat lei tot die akkommodasie van die oog).
3	Die antwoord is goed gestruktureerd, en beskryf logies die oorsake en gevolge wat lei tot die akkommodasie van die oog, tesame met die verwante konsepte. Die sleutelkonsepte word op so 'n manier verduidelik dat die antwoord insig en begrip van die relevante vakkonsep / vraag demonstreer.



Feitelike inhoud: 15
Sintese: 3
18

TOTAAL VRAAG 5: 35
TOTAAL AFDELING C: 35

GROOTTOTAAL: 200