

BIOLOGIE SG VRAESTEL 2

Hierdie verslag behoort saam met die eksamenvraestel bestudeer te word.

ALGEMENE KOMMENTAAR

- ❖ Kandidate lees die vrae uiters swak en gee dus óf verkeerde óf onvolledige antwoorde.
- ❖ Kandidate moet geleer word om die antwoord op elke vraag (nie onderafdelings van 'n vraag nie) op nuwe bladsy te begin, reëls oop te laat tussen elke onderafdeling en leesbaar te skryf.

AFDELING A

Oor die algemeen is hierdie afdeling heeltemal bevredigend beantwoord. Biologiese terme in vraag 1.2, 1.4.2 en 1.5 is egter onbevredigend beantwoord. Dit dui aan dat kandidate nie begrip gehad het van die basiese kennis van biologie nie, bv. hulle het nie definisies, diagramme, byskrifte en funksies geken nie.

AFDELING B

VRAAG 2

Die vraag is oor die algemeen nie na wense beantwoord nie. Die maak van logiese afleidings vanuit bevindings van eksperimente of data was ook vir baie kandidate 'n probleem. Baie kandidate kon nie inligting vanaf die tabel korrek lees nie. Hulle het waarskynlik nog geleenthede benodig om hierdie vaardighede te ontwikkel.

- 2.1 Kandidate het die instruksies van die vraag verkeerd vertolk en Ja/Nee geantwoord in plaas daarvan om elke keer na die beblaaarde takkies te verwys.
 - 2.1.1 Redelik goed beantwoord
 - 2.1.2 Swak beantwoord – waarskynlik omdat hulle nie die instruksies kon volg/verstaan nie, maar ook omdat hulle nie die netto waterverlies met verwelking in verband kon bring nie.
 - 2.1.3 Swak beantwoord – kandidate het nie verstaan dat guttasie plaasvind wanneer daar 'n netto toename in water binne die sel is nie, en dat die plant onder sekere toestande nie oor 'n ander meganisme beskik om van hierdie oortollige water ontslae te raak nie.
- 2.2 Dit was weereens opmerklik dat groot groep kandidate nie aan praktiese werk blootgestel was nie.
 - 2.2.1 Beduidende aantal kandidate het hierdie eksperiment verwar met die een oor die suigkrag van transpirasie.
 - 2.2.2 Baie swak beantwoord. Kandidate het geskryf oor die inlaat van 'n lugborrel in plaas daarvan om die lugborrel wat al klaar in die sisteem was, na sy beginpunt terug teskuif.
 - 2.2.3 Redelik goed beantwoord.
- 2.3 Die raam rondom die skets is verwar met die selwand.

VRAAG 3

Hierdie vraag is oor die algemeen swak beantwoord.

- 3.1 Kandidate kon nie die definisie van transpirasie gee nie en was geneig om net daarna te verwys as die verlies van water.
- 3.2 Kandidate het hierdie vraag swak geïnterpreteer. Omdat die meeste plante kutikula het, is die strukturele aanpassing die verdikking van hierdie laag. Die meeste het net na kutikula, huidmondjies, ens., verwys sonder om te noem dat dit verdik, versonke, ens., is. Blaarrangskikking is nie 'n aanpassing van 'n blaar nie, maar eerder 'n aanpassing van die bognondse dele in geheel.
- 3.3 Hierdie vraag is swak beantwoord ten spyte daarvan dat kandidate 4 uit die 13 punte kon gekry het deur bloot die korrekte lesings (met hul eenhede) neer te skryf. Hulle het gesukkel om logiese afleidings vanaf die data (grafiek) te maak.

- 3.3.1-3.3.3 Redelik goed beantwoord. Baie kandidate gebruik nog steeds onaanvaarbare terme soos “koudbloedig” i.p.v. ektotermies.
- 3.3.4 Baie kandidate het na kleuroriëntasie i.p.v. liggaamsoriëntering verwys.
- 3.3.5 Uiters swak beantwoord. Van die grafiek kon afgelei word dat die mens alreeds teen 09.00 sweet. Die antwoord op hierdie vraag is dus ‘n “**toename** in die **tempo** van sweet”. Kandidate het meestal net geskryf dat die mens sweet.
- 3.4 Hierdie vraag is uiters swak en vaag beantwoord. Baie kandidate het geskryf dat die brein die mens help om te dink in plaas daarvan dat dit die setel vir hoër intellektuele aktiwiteite, bv. oordeel, redeneer en geheue is.

VRAAG 4

Oor die algemeen is hierdie vraag bevredigend beantwoord, behalwe vrae 4.2.3, 4.2.4, 4.3.3 en 4.3.5. Baie kandidate het by 4.2.4 “om beter te sien” geskryf i.p.v. “om ‘n helder beeld te vorm”.

VRAAG 5

- 5.1 Oor die algemeen is die vraag bevredigend beantwoord, maar kandidate het *ureum* met uriene verwar (bv. die funksie van die blaas). Hulle het nie die funksie van die sfinkterspier geken nie en het dus baie vae en algemene kennis-tipe antwoorde gegee. Afrikaanssprekende kandidate het die terme *afskeiding* (sekresie) en *uitskeiding* (ekskresie) in vraag 5.1.5 met mekaar verwar.
- 5.2 Te veel kandidate maak verkeerdelik gebruik van woorde/beskrywings soos dikker in plaas van **wyer/groter deursnee** wanneer hulle die afferente en efferente bloedvate vergelyk.
- 5.2.3 Die manier waarop die grootte van bloedvate tot die proses van ultra-filtrasie bydra, is heeltemal verwar. Bloed is in die algemeen onder hidrostatiese druk a.g.v die hart se pomp-aksie. Die wyer deursnee van die afferente arteriole in vergelyking met dié van die efferente arteriole verhoog die bloeddruk in die glomerulus sodat filtrasie op ‘n meer effektiewe/doeltreffende manier kan geskied. Kandidate het net na die verskil in die grootte van die bloedvate verwys en dat daar druk is, asof daar in die eerste plek geen druk was nie.

BIOLOGY SG PAPER 2

This report should be studied in conjunction with the examination question paper.

GENERAL COMMENTS

- ❖ Many candidates read the questions very poorly and thus gave either incorrect or incomplete answers.
- ❖ Candidates must learn to start the answer to each question (**not** subquestion) on a new page, to skip lines between answers and to write neatly and legibly.

SECTION A

In general this question was well answered. The biological terms in Questions 1.2, 1.4.2 and 1.5 were, however, answered rather poorly. This indicates that candidates did not know the basics in biology. For example, they did not know definitions, diagrams, labels, or functions.

SECTION B

QUESTION 2

In general this question was answered unsatisfactorily. Candidates were unable to make logical deductions from the findings of experiments or data. Many candidates could not read information correctly from the table. They obviously required more opportunities to develop these skills.

2.1 Candidates misinterpreted the instructions to this question. They therefore answered Yes/No instead of referring to the leafy twigs in each case.

2.1.1 Answered reasonably well.

2.1.2 Poorly answered - possibly because they could not follow/understand the instructions, but also because they did not relate the **nett** water loss to wilting.

2.1.3 Poorly answered. Candidates did not understand that guttation will occur when there is a nett increase in water within the cell, and that, under certain conditions, the plant has no other means of losing this excess water.

2.2 It was once again obvious that a large group of candidates had not been exposed to practical work.

2.2.1 A significant number of candidates confused this experiment with the one on transpiration pull.

2.2.2 Very poorly answered. Candidates wrote about allowing an air bubble into the system instead of moving the one already present back to its starting point.

2.2.3 Answered reasonably well.

2.3 The frame around the sketch created confusion because a significant number of candidates referred to it as the cell wall.

QUESTION 3

In general this question was answered poorly.

3.1 Candidates did not know the definition of transpiration and tended to refer to it as a loss of water.

3.2 Most candidates were unable to interpret this question correctly. Many just mentioned that a cuticle is present. Since most plants have cuticles, a structural adaptation of leaves to prevent water loss is the presence of thicker than "normal" cuticles. Leaf arrangement is not a structural adaptation of a leaf; rather, it is an adaptation of the aerial parts in general.

3.3 This question was answered rather poorly, in spite of the fact that candidates could have got 4 out of the 13 marks just by reading and recording the correct temperatures (including the units) of the lizard and the human. Candidates were unable to make logical deductions from the data given (graph).

3.3.1-3.3.3 Answered fairly well. Some candidates still use unacceptable terms such as "cold-blooded" instead of ectothermic.

- 3.3.4 Many candidates referred to skin colour instead of body orientation.
- 3.3.5 Very poorly answered. From the graph, one can draw the conclusion that the human is already sweating at 09.00. The answer to this question is therefore “an **increase** in the **rate** of sweating”. Most candidates did not understand this and just wrote that the person sweats.
- 3.4 This question was extremely poorly and vaguely answered. A large number of candidates wrote that the brain helps one to think instead of saying that it is the seat for higher intellectual abilities such as thought, reasoning, memory and judgement.

QUESTION 4

In general this question was answered satisfactorily, with the exception of 4.2.3, 4.2.4, 4.3.3 and 4.3.5.

Many candidates wrote “to see better” instead of “to form a clearer image” as part of the answer to 4.2.4.

QUESTION 5

- 5.1 Generally this question was answered satisfactorily, but candidates often used the term *urea* incorrectly when actually referring to urine (e.g. function of the bladder). Generally candidates did not know the function of the sphincter muscle and thus wrote very vague and general knowledge type answers.
- 5.2 Many candidates still used words such as thicker incorrectly when comparing the afferent and efferent arterioles instead of using **wider/bigger/larger diameter**.
- 5.2.3 How the size of the blood vessels contributes to the process of ultra-filtration was completely misunderstood. Blood is generally under hydrostatic pressure because of the pumping action of the heart. The fact that the afferent arterioles in the kidneys have a larger diameter than the efferent arterioles serves to **increase** the blood pressure in the glomerulus **even further** to ensure **more efficient filtration**. Candidates simply answered that the afferent arterioles were wider than the efferent arterioles therefore causing pressure in the glomerulus, as if there were no pressure at all to begin with!
- 5.2.5 (i) Poorly answered
(ii) Answered well