

**GENERAL**

Although some concessions were made for 2004, please note that, in future, common terms, such as *oogbindvlies* and *dekvlies* will no longer be accepted. As from 2005, only correct scientific terminology will be accepted.

Also, it is vital that educators adhere to the “principles of marking” within the school.

**QUESTION 1**

1.1 Candidates did fairly well.

1.2 Poorly answered because of a lack of basic knowledge.

1.3 Candidates did well in this question.

1.4 The large number of incorrect answers again illustrated a lack of basic knowledge. Candidates did not know the functions of the different parts of the eye. Q1.4.3 was very poorly answered because candidates could not distinguish between A and F, i.e. they did not CLEARLY state the difference between the two parts by saying, for example, that part F is transparent, while part A is not.

1.5 The candidates interpreted the experiment wrongly. They thought of the potometer and therefore mentioned factors like humidity, temperature, etc.

In Q1.5.1, where they had to improve the design of the experiment, they did not use the introductory information relating to oil and Vaseline. It would appear that they had not been exposed to this type of higher order question.

Q1.5.2 - Poorly answered. Candidates often did not show their calculations as instructed and could not perform relatively simple mathematical operations. They could not deduce that the volume of water lost by the plant would be equal to the initial volume in the measuring cylinder, less what remained in the measuring cylinder at the end of the experiment.

Q1.5.3 – Most students did not have a clue as to what was expected of them and answered it extremely poorly.

Q1.5.4 – It was extremely disappointing to note that candidates, year after year, still do not know the adaptations of structures such as the xylem or the root hair. Candidates could not distinguish between a control and an experiment, or give a reason why a control is necessary.

**QUESTION 2**

2.1.1 Many candidates confused the term *endodermis* with *epidermis*.

- 2.1.2 Poorly answered. Water absorption was explained. Candidates are still struggling with the concept of structural adaptations.
- 2.1.3 Poorly answered. Water absorption was described instead of the pathway. Many used flow diagrams, which were not accepted because of instruction 8 on page 1 to give a description. Candidates were unable to distinguish between the various cells of the root. They became confused about the anatomy of the leaf, e.g. they used terms such as *palisade* or *spongy mesophyll*.
- 2.2.1 Well answered. Most candidates determined the correct time from the graph.
- 2.2.2 Very poorly answered. Most candidates listed the functions. They described the rate of transpiration. And were unable to make comparisons.
- 2.3.1 Poorly answered. Only a few candidates could describe the mechanism very well. Many candidates explained the time of opening, e.g. during the morning or the day, when there is sunlight, the stomata open. Also, it was often stated that water enters the stomata, instead of the guard cells.
- 2.3.2 Answered fairly well.

### QUESTION 3

- 3.1.1 Answered reasonably well.
- 3.1.2 Answered well. Those who did not get it right often confused *urine* with *urea*.
- 3.1.3 Basic knowledge question – they either knew the answer or did not know it.
- 3.1.4 Answered either very well or very poorly. Candidates tend to shy away from learning drawings or diagrams. The prescribed rules on how to draw were not followed, i.e. size, how lines must be drawn, pencil, solid lines, labels below one another. Arrows were sometimes used in stead of lines – this can be confusing, especially as regards afferent- and efferent arterioles.
- 3.1.5 Candidates described the structural adaptations of Malpighian body and not the proximal convoluted tubule CELLS. Interpretation of question was problematic.
- 3.2.1 Answered well – except that no units were given.
- 3.2.2 Candidates could not explain **why** the glucose re-absorption rate was 890 arbitrary units and the excretion rate was 0. Candidates just explained what they saw in the table, e.g. 890 glucose was absorbed and none were excreted.
- 3.2.3 Not badly answered, but the following problems were encountered:
- (1) Candidates tend to give more than two answers. (Only the first two were accepted if they did not follow the given instructions.)
  - (2) Candidates gave any substance that is present in urine. The impression is that they did not know which substances contained nitrogen.

#### QUESTION 4

- 4.1.1 Answered reasonably well.
- 4.1.2 This basic-knowledge question was poorly answered.
- 4.1.3 Question was poorly answered, even though the memorandum was expanded to include numerous possibilities.
- 4.1.4 Many candidates did not explain the pathway and answered in the form of flow diagrams, which were not accepted because of instruction 8 on page 1.
- 4.1.5 Answered reasonably well.
- 4.2.1 Answered reasonably well.
- 4.2.2 Candidates too often supplied only the function of the pinna.
- 4.2.3 Answered reasonably well.

#### QUESTION 5

- 5.1 This question was poorly answered. The drawing was misinterpreted as part of a leaf and therefore many candidates mentioned external environmental factors instead.
  - 5.1.1 Candidates could not distinguish between the composition of the blood and tissue fluid.  
Errors made by candidates: Wrote *carbon* instead of *carbon dioxide*  
Wrote *waste* instead of *nitrogenous waste*
  - 5.1.2 Candidates mentioned environmental factors.
  - 5.1.3 Extremely poorly answered.
  - 5.1.4 Extremely poorly answered because they could not identify the duct in 5.1.3.
- 5.2.1 Poorly answered, or else many candidates did not attempt the question at all. Those that did had difficulty expressing their answers.
- 5.2.2 Poorly answered. Candidates mentioned *bigger and thicker* blood vessels instead of *dilated (wider)* blood vessels. They could not explain the consequence of more blood reaching the skin, i.e. more heat reaches the skin and therefore it feels warmer.
- 5.2.3 Candidates did not mention the relationship between constant body temperature and enzymes or metabolism.
- 5.3.2 Very poorly answered – most candidates incorrectly answered that the person would lose weight. Also, the few that answered correctly were unable to explain why this would happen