

**Question 1**

- 1.1 Well answered.
- 1.2 Fairly answered. Many learners did not get coordination and guard cells correct.
- 1.3 Fairly answered. Marks awarded to all learners for 1.3.5.
- 1.4 1.4.1 and 1.4.2 were well answered. But 1.4.3 was not well answered due to interpretation problems which may also be due to absence of "light" label in the english question paper.
- 1.5. Fairly answered. In 1.5.1 many learners did not refer to reflex arc. In question 1.5.3 many learners still confused the concept impulse with stimulus.
- 1.6.1 was poorly answered because too many learners are still confusing transpiration pull compared to rate of transpiration experiment. 1.6.2 was well answered. 1.6.3 was poorly answered because of poor understanding of capillarity principle but also in Afrikaans question paper the meniscuses were not indicated. 1.6.4 was poorly answered because too many learners had no idea how to answer the question. Many learners discussed precautions. It appears that many learners were not exposed to this process.
  - 1.6.5 was fairly answered.
  - 1.6.6 was fairly answered but still too many learners misunderstand the high humidity = low transpiration rate principle.

**Question 2**

- 2.1 2.1.1 was well answered. Although learners confused the response to the different questions, 2.1.2 – 2.1.3 were fairly answered. 2.1.4 was well answered.
- 2.2.1 – 2.2.3 were well answered. Some basics errors or conceptual misunderstanding are made by many learners:
  - \* Cornea not for protection or to maintain shape.
  - \* There is some confusion about reflection and refraction.
  - \* Learners confuse circular muscle in iris and ciliary muscles.
- 2.3 Fairly answered. Most learners focus on discussing process of accommodation instead of answering the question.
- 2.4 Poorly answered. Almost 80% of the learners provided the letter but **NOT** the name of the parts (even though it was bold printed on paper). Common errors include hypophysis being confused with hypothalamus, cerebellum confused with cerebrum and the spelling of medulla oblongata. 2.4.2 was well answered. 2.4.3 was poorly answered.

**Question 3**

- 3.1.1 – 3.1.2 were well answered.
- 3.1.3 Learners scored many marks. Learners did not link previous questions and thus lost unnecessary marks.
- 3.1.4 Poorly answered. Many learners answered **C** (Thyroid gland) instead of **A** (pituitary gland) because the word **first** was misread in the question.
- 3.1.5 Learners scored many marks. Many learners still do not fully understand the feedback mechanism.

3.2.1 Poorly answered. Many learners are confused about the ratio of surface area compared to volume. Another fact: smaller animals lose heat **faster** and not more than larger animals.

3.2.2 Poorly answered. Many learners do not understand how the skin becomes darker. Also many learners incorrectly mention that the darker colour attracts instead of absorbs sunlight. Generally learners poorly answered questions relating to temperature regulation.

3.3 Many learners could not interpret information on graph. This led to problems answering questions 3.3.1 - 3.3.3.

3.3.4 was poorly answered. Especially the Afrikaans learners because the word "vel" (skin) is not in the question. This meant that any of the graphs could have been used to answer the question.

3.4 Poorly answered. Many learners thought that this question was still related to temperature as the above questions and were confused.

#### **Question 4**

4.1.1 Fairly well answered. Afrikaans learners wasted a lot of time due to translation mistake.

4.1.2 Fairly well answered but there are still too many learners who cannot perform basic calculations.

4.1.3 - 4.1.5 fairly answered. Many learners did not fully answer the questions. Especially question 4.1.5 they did not link proteins to urea which is a primary component of urine.

4.2.1 Poorly answered.

4.2.2 Fairly well answered. Many learners did not refer to kidney but changes in general.

4.2.3 Very well answered.

#### **Question 5**

5.1 Fairly well answered. Many learners have problems understanding and interpreting graphs.

5.2 Well answered. Possible reason is that many learners started with this question. Learners who wrote excessive essay (sometimes up to 3 full pages) had problems finishing the other questions.