

## **BIOLOGY**

### **SUBJECT 5008**

#### **PAPER 04**

#### **GENERAL PERFORMANCE**

Generally the paper was fair and good candidates scored high marks. This paper required knowledge of experiments done practically, but the answers of some of the candidates revealed that they had not done the practical work as evidenced by their poor answers.

#### **Question 1**

- (i) The majority of the candidates performed badly. Those who failed to make it did not understand the question. They were supposed to suggest a reason, as to maintain the same pressure inside or for comparison. Answers such as to "initiate normal germination conditions" were common.
- (ii) Many candidates got full marks as they were able to recall that soda lime absorbs carbon dioxide.
- (iii) Some candidates were not measuring from the bottom of the meniscus and as a result their answers were wrong. Few candidates lost marks for measuring in centimetres and writing the unit in mm.
- (iv) This question was done badly as the majority of the candidates did not understand the phrase "account for." As a result most of the answers were wrong. The expected answer was: germinating seeds use up oxygen during respiration causing a fall in pressure and this made the liquid rise.
- (v) Many candidates got it right as B.
- (vi) This was poorly done by many candidates who had no idea about sensitivity. The expected answer was to use capillary tubes or to have glass tubes with smaller diameter.

#### **Question 2**

The question was generally performed badly.

- (a) (i) It was difficult for candidates to spell out the conditions being investigated showing that they had not done this work practically.
- Consequently wild answers such as conditions of fungi to grow and factors that affect fungal growth were given. The expected answers were "light/darkness" and "moisture/water".
- (ii) It proved very difficult for the majority of the candidates to deduce conclusions. Most of the candidates were simply writing down results. The expected answers were for A and B, "moisture promotes fungal growth", for B and C darkness promotes fungal growth or light conditions to not favour fungal growth.
- (iii) A few candidates were able to name the factors which affect fungal growth. Most of the candidates were writing factors which were impossible to investigate experimentally. This results in them losing marks. A simple factor was temperature, which needed identical set up of the apparatus with different temperatures.
- (iv) Majority of the candidates lost marks since the expected results would come from the described experiment. The expected response was "more growth at suitable temperature", and no/less grows at low temperatures.

### Question 3

It is disappointing to note the high number of candidates with poor biological drawing skills.

- (a) (i) Candidates were expected to draw a line of the photograph. The correct diagram should have had a correct shape and proportion, seeds attached to the placenta and no shading.
- The expected labels were see, percarp, stalk/pedice and placenta.
- (ii) The length of photograph was  $244 \pm 2\text{mm}$ . Some candidates lost marks by writing their answers in cm without indicating their new unit of length.
- (iii) Magnification =  $\frac{\text{Length of drawing}}{\text{Length of photograph}}$

Most candidates were aware of this formula, but they thought the numerator should always be bigger than the divider. As a result, their substitution was wrong.

Few candidates lost marks for not including x (times) sign in their final magnification answer.

- (b) Self dispersal, drying and twisting and the thrusting of the seeds away from the mother plant were expected in the description as the answer. Few candidates confused (i) dispersal with population (ii) dispersal with spacing of seeds. Other thought that it was animal dispersal.

#### **Question 4**

- (a) (i) The question was well done by many candidates. However, some candidates did not understand the concept of tallies. They missed the point of grouping quantities into five and others multiplied the number of pods by tally to get the total, which gave total number of seeds instead of total number of pods.
- (ii) This was done by many candidates. However, some candidates lost marks for incorrect labelling of axes and for the bars which had no uniform width. Few candidates seemed not to understand the difference between a bar graph and a histogram.
- (b) The majority of the candidates scored full marks in this question. The expected answers were genetic factors and environmental factors.