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Examiners' Report / Principal Examiner Feedback

Summer 2010

IGCSE

IGCSE Biology (4325) Paper 03

IGCSE Science (Double Award) (4437) Paper 07

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Publications Code UG024183

4325 Paper 03 Biology Report – Summer 2010

General

The paper was felt to be of a similar standard to those set previously. The candidates' performance was felt to be better than that of the previous series. The paper discriminated well, with a wide range of marks seen. The full range of marks was seen for each part of each question.

Comments on individual questions

Question 1

This question was about diffusion and precautions necessary when carrying out experiments.
(a) Candidates had to choose apparatus for investigating diffusion. The vast majority of candidates did this well.
(b) Most candidates knew that wearing plastic gloves was to make the experiment safe. A few thought that it made the experiment more reliable.
(c) Most candidates knew that if a dye of a higher concentration was used the rate of diffusion would be faster. A few thought that the rate would stay the same.

Question 2

This question tested the candidates' knowledge and understanding of carrying out food tests and what conclusions could be drawn from the results.
(a) Most candidates were able to choose the correct reagents for carrying out the tests for starch and glucose.
(b) Similarly, most candidates knew that blue-black was the positive result for starch and that blue was the negative result for glucose. Some candidates appeared to misread the question for glucose and chose colours that would indicate a positive result.

Question 3

This question was centred on an experiment to measure the rate of water loss in plants, using a potometer.
(a) This tested the candidates' ability to understand and read the scale on a photometer. Most answered this well, but some did not read the first scale correctly. In this case marks could still be gained in the second part for a 'carry forward error'.
(b) Most candidates were able to describe and explain how the results would differ at a higher temperature, most saying that the bubble would move faster because of increased transpiration. A number of candidates who failed to get the full marks available discussed water in the correct context, but did not use the correct terms, such as evaporation or transpiration to gain the marks.
(c) Many candidates scored full marks here in identifying other factors what would affect water loss in plants. The most commonly lost mark was for a lack of specificity when mentioning water. Most candidates gained full marks for their results table, although some lost a mark for not mentioning bubbles.

Question 4

This question centred round genetic crosses in plants and also tested the effect of light on plant growth.
(a) Candidates were required to fill in a tally chart for the types of cress resulting from a genetic cross. Most did this well, but some write the answers in the spaces, the wrong way round. A number of candidates did not appear to understand what a tally chart was and simply left that part of the table blank or wrote phrases, such as dominant/ recessive. (b) Most candidates were able to draw a plant curving towards the window. Where there were wrong answers, the candidates tended to make the plant grow straight, but taller, perhaps confusing what might happen if there was little light.

Question 5

Candidates' proficiency at drawing and interpreting graphs was tested here. The question was about how the length of exercise affects breathing rate.
(a) Most candidates scored full marks in this part where they were asked to draw a graph. If marks were lost, they tended to be because the axes were not labelled correctly, often missing out the units.
(b) Many candidates answered this question well. However, a significant number did not understand the difference between describing the effect of increasing the length of time of exercise of breathing rate and explaining it. Some simply described the effect twice. Therefore, many marks were lost unnecessarily. For the explanation candidates tended to mention the idea of oxygen linked to increased respiration. If a third mark was obtained, it tended to be to mention muscles or the requirement of increased energy.

Question 6

This question was based on an investigation into the population size of limpets at different distances from the sea.
It is pleasing to see candidates using the previous papers to be prepared, as there was evidence of CORMS being used. Some candidates did not appear to appreciate what limpets were and where they lived, despite being told they lived on rocks and also the fact that a picture was included in the question.
The majority of candidates scored at least three or four marks. The most common omissions were not mentioning that they should be of the same species/age etc. and not discussing fair testing, such as on the same beach or at the same time of day, etc..

Question 7

This question was centred on an experiment to investigate the effect of light intensity on photosynthesis.

(a) Almost all candidates knew that oxygen was the gas given off in photosynthesis. However, some thought that it was carbon dioxide.

(b) Most candidates gave sensible answer about how light intensity could be altered, the most common answer being to move the lamp backwards and forwards.

(c) Most candidates gained at least two marks for variables that should be kept constant. Temperature was the most frequent response, as well as volume/amount of water. A significant number incorrectly referred in some way to the light distance or strength, of course in the independent variable. Some candidates referred to the 'same pondweed' rather than to the same species/type.

(d) The average light intensity was usually calculated correctly. Most candidates scored at least three out of the four marks for the table of results, the most common mistake being to refer to bubbles instead of bubbles per minute. Most identified the anomalous result correctly.

(e) Almost all candidates knew that the number of bubbles would increase, but not all then went on to make reference to photosynthesis.

(f) Most candidates showed that they understand how accuracy could be increased, the most common answer being to use a gas syringe or to measure the volume of gas given off.

BIOLOGY 4325, GRADE BOUNDARIES

Option 1: with Written Alternative to Coursework (Paper 3)

	A*	A	B	C	D	E	F	G
Foundation Tier				67	54	41	28	15
Higher Tier	84	74	64	54	42	36		

Option 2: with Coursework (Paper 04)

	A*	A	B	C	D	E	F	G
Foundation Tier				68	54	40	27	14
Higher Tier	85	75	65	55	43	37		

Note: Grade boundaries may vary from year to year and from subject to subject, depending on the demand of the question paper.

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