



## External Assessment Report 2011

Subject	<b>Biology</b>
Level	<b>Intermediate 1</b>

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the Examination.

# Comments on candidate performance

## General comments

The number of presentations at Intermediate 1 was slightly higher than in the previous year and the highest number in the last four years. Most candidates were in S4 with the number of presentations at S3, S5 and S6 and from FE colleges remaining low.

Overall, candidates performed slightly less well in this year's examination compared to last year. In Section A in particular, many candidates found the Knowledge and Understanding (KU) questions difficult and there was a significant decrease in performance. In Section B, candidates performed broadly in line with previous years.

The total percentage of candidates achieving Grades A–C was closely comparable to that in 2009 and this is broadly in line with previous years and centre estimates.

The number of candidates obtaining No Award accounted for 19.6% of presentations, which continues to be rather high.

The recent trend of fewer candidates leaving questions unanswered was broadly sustained.

## Areas in which candidates performed well

Based on statistics, most candidates performed well in the following areas:

### Section A

Question 1: Conditions treated with fungal cream (1 mark, KU).

Question 8: Graph from tabulated data (1, PS).

Question 10: Interpretation of temperatures and health (1, KU/PS).

Question 21: Description of pelleted seeds (1, KU).

Question 23: Experimental set-up to compare type of bulb (1, PS).

### Section B

Question 1 (a)(i), (ii) and (iii): Extracting information from passage of text (3 marks, PS).

Question 3 (a)(i): Interpreting information from a line graph (1, PS).

Question 3 (a)(iv): Reliability (1, PS).

Question 3 (b): Enzymes in biological detergents and their enclosure in a harmless coating (1, KU).

Question 5 (b): Completing table using data from pie chart (1, PS).

Question 6 (a)(i): Conclusion from data in graph (1, PS).

Question 6 (b)(i): Health condition indicated by being underweight (1, KU).

Question 6 (b)(ii): Health condition indicated by being overweight (1, KU).

Question 6 (c): Name of instrument used to measure body fat (1, KU).

Question 8 (a)(i): Identification of information provided in table (1, PS).

Question 8 (d)(i): Identification of information provided in branching key (1, PS).

### **Areas which candidates found demanding**

Based on the statistics, many candidates found difficulty in the following areas:

#### **Section A**

Question 4\*: Interpretation from diagram and calculation (1, PS).

Question 11\*: Percentage calculation (1, PS).

Question 14\*: Effects on breathing during exercise (1, KU).

Question 16: Cause and relief of muscle fatigue (1, KU).

Question 24: Compost materials and their properties (1, KU).

Question 25: Identification of experimental control (1, PS).

#### **Section B**

Question 1 (b): Few candidates named a product produced in a fermenter (1, KU).

Question 1 (c): Few candidates named the fungus used to produce flavouring and food colourings (1, KU).

Question 2 (a)(i): Few candidates named curds as the product of the action of rennet on milk (1, KU).

Question 2 (a)(ii)\*: Very few candidates correctly described the effect of rennet in sufficient detail (1, KU).

Question 2 (a)(iii): Few candidates named an alternative source of rennet (1, KU).

Question 2 (c)(iii): Few candidates plotted the line graph accurately (1, PS).

Question 3(a)(ii)\*: Few candidates correctly carried out calculation using data from the line graph (1, PS).

Question 3 (c)\*: Very few candidates correctly described a method of reducing environmental impact of toxic chemicals in waste water (1, KU).

Question 4 (b)\*: Few candidates provided a conclusion from the information provided (1, PS).

Question 5 (a)\*: Few candidates correctly connected all four food groups with the appropriate use (2, KU).

Question 6 (a)(ii)\*: Very few candidates correctly interpreted the graph to identify the two required heights (1, PS).

Question 7 (a)(i) 2\*: Few candidates plotted the bar graph accurately (1, PS).

Question 7 (a)(ii): Few candidates provided a conclusion from the information provided (1, PS).

Question 8 (a)(ii)\*: Very few candidates correctly provided the correct term 'biological control' to describe control of insect pests (1, KU).

Question 8 (c)\*: Very few candidates correctly provided the name of a common plant disease and a method to control it (1, KU).

Question 8 (e)\*: Few candidates correctly calculated the increase factor from the data provided (1, PS).

Question 9 (b)\*: Very few candidates correctly described dormancy (1, KU).

Question 9 (c)(ii)\*: Few candidates fully described the temperature changes using the information provided (1, PS).

Questions marked with an asterisk (\*) were intentionally demanding questions.

## **Advice to centres for preparation of future candidates**

### **General**

Generally, candidates were well prepared and a significant number of candidates performed well in the examination.

Centres are continuing to present candidates appropriately, with their skills and abilities being suited to this Course.

As in previous years, candidates should continue to improve their recall of knowledge.

Performance in KU questions, in Section A in particular, was generally weaker with many candidates not gaining marks for straightforward knowledge.

A significant number of candidates continue to find some calculations challenging, in particular percentages. Centres may wish to consider developing liaison between staff delivering this Course and those colleagues responsible for other relevant and related areas of the curriculum such as Mathematics. This should allow a more consistent approach to learning and teaching and allow candidates to appreciate the transferability of skills across curricular areas.

Improvement in the standard of drawing bar graphs has continued. The overall standard of drawing line graphs has not been similarly sustained, with many candidates failing to gain a mark for accurately plotting results. Provision of a scale was good but many candidates did not fully label the axes.

PA/PS questions were generally answered well, but many candidates were unable to draw a suitable conclusion from the information provided.

Centres should emphasise the concept of controls in experimental investigations and work with candidates to identify valid conclusions drawn from evidence.

## Statistical information: update on Courses

Number of resulted entries in 2010	5,716
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Number of resulted entries in 2011	5,873
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### Statistical information: performance of candidates

#### Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 75				
A	21.3%	21.3%	1,251	49
B	24.1%	45.4%	1,414	41
C	23.9%	69.3%	1,406	33
D	10.1%	79.4%	594	29
No award	20.6%	100.0%	1,208	-

## **General commentary on grade boundaries**

While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.

Each year, therefore, SQA holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Head of Service and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.

The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.

The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.

Where standards are comparable to previous years, similar grade boundaries are maintained.

An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in say Higher Chemistry this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions.

SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as Arrangements evolve and change.