



External Assessment Report 2010

Subject	Biology
Level	Intermediate 1

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 similar to that of the previous year, with most of the candidates being presented in S4. The number of presentations at S3, S5 and S6 and from FE Colleges remained low.

Overall, candidates performed slightly less well in this year's examination compared to last year, both in Section A and in Section B.

There was a slight decrease in the number of candidates achieving Grades A–C compared to 2009 but this is broadly similar to previous years and the same as centre estimates.

There was an increase in the number of Grade D and No Award compared to 2009, accounting for a total of 20.7% of presentations.

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

Areas in which candidates performed well

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

Section A:

- ◆ Question 1 — products made using yeast (KU).
- ◆ Question 4 — identification of correct representation of tabular information in form of a graph (PS).
- ◆ Question 8 — identification of reason for enclosing detergent enzymes in coating (KU).
- ◆ Question 10 — identification of three methods of measuring pulse rate (KU).
- ◆ Question 13 — identification of factor being investigated from results (PS).
- ◆ Question 14 — methods of reducing blood pressure (KU).
- ◆ Question 15 — identification of possible source of error in investigating measurement of tidal volume (KU).
- ◆ Question 16 — blood test for leukaemia (KU).
- ◆ Question 22 — interpretation of diagram to make conclusion (PS).
- ◆ Question 23 — use of branching key (PS).

Section B:

- ◆ Question 3 (a)(i) — completion of table using information in text (PS).
- ◆ Question 3 (ii) — identification of piece of information from text/table (PS).
- ◆ Question 3 (b)(i) — completion of pie chart using data provided in table (PS).
- ◆ Question 4 (a)(i) — conclusion from information provided in tabular form (PS).
- ◆ Question 6 (a)(i) 1, 2 and 3 — completion of bar chart from data provided in tabular form (PS).
- ◆ Question 7 (a)(i) — identification of three factors within experimental context (PS).
- ◆ Question 9 (a)(ii) — providing an example of substance carried in blood (KU).
- ◆ Question 10 (a) — simple calculation (PS).

- ◆ Question 10 (d) — providing an example of a health condition which may be indicated by a person being underweight (KU).

Areas which candidates found demanding

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

Section A:

- ◆ Question 7 — pasteurisation as a method to destroy disease-causing microbes (KU).
- ◆ Question 9* — identification of bronchiole on a diagram of breathing system (KU).
- ◆ Question 21* — identification of offset from description of various plant propagation structures (KU).
- ◆ Question 25 — identification of methods to control aphids (KU).

Section B:

- ◆ Question 1 (a) — naming of the process of taking a cutting shown in a diagram (KU).
- ◆ Question 2 (b)(iii) — plotting points on a line graph (PS).
- ◆ Question 3 (c)* — naming a mineral needed for plant growth (KU).
- ◆ Question 4 (a)(iii) — conclusion from information provided in tabular form (PS).
- ◆ Question 5 (a) — naming of the process of immobilisation (KU).
- ◆ Question 5 (b)* — advantage of immobilisation (KU).
- ◆ Question 6 (b) — providing an example of a product which can be made by upgrading waste from yeast-based industries (PS).
- ◆ Question 7 (a)(ii) — calculation from data in table (PS).
- ◆ Question 7 (a)(iii)* — explanation of why the conclusion provided is not valid (PS).
- ◆ Question 7 (a)(iv)* — provision of conclusion from investigation (PS).
- ◆ Question 7 (a)(v)* — provision of suitable control for investigation (PS).
- ◆ Question 8 (a)(iii) — identification of period of recovery time from data in line graph (PS).
- ◆ Question 8 (b) — statement of effect of regular exercise on resting pulse rate (KU).
- ◆ Question 9 (a)(i) — marking vessel with high blood oxygen on diagram of circulatory system (KU).
- ◆ Question 10 (c)* — statement of use of protein in body (KU).
- ◆ Question 11 (a)* — percentage calculation (PS).

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

Advice to centres for preparation of future candidates

Generally, candidates were well prepared and a significant number of candidates performed very 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 B was generally weaker with many candidates not gaining marks for straight-forward knowledge.

Candidates had better recall of knowledge in Section A as in previous years.

A significant number of candidates still find some calculations difficult, in particular percentages.

There appeared to be an improvement in the standard of drawing graphs, in particular the use of a ruler:

- ◆ when joining the plots of a line graph
- ◆ when drawing the tops of the bars in a bar graph (candidates should always clearly draw a straight line at the top of the bar)

PA/PS questions were generally answered well but many candidates were unable to identify reliability as good experimental practice.

Centres might consider emphasising the concept of controls in experimental investigations and working to improve candidates' understanding of valid conclusions being drawn from evidence.

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Statistical information: update on Courses

Number of resulted entries in 2009	5748
Number of resulted entries in 2010	5716

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	20.2%	20.2%	1153	51
B	23.2%	43.4%	1325	43
C	25.2%	68.6%	1443	35
D	9.6%	78.2%	548	31
No award	21.8%	100.0%	1247	—

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 to maintain comparable standards across the years, even as Arrangements evolve and change.