



External Assessment Report 2012

Subject(s)	Biology
Level(s)	Intermediate 2

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 majority of candidates were well prepared for the examination with very few questions left unanswered in the paper. Marks were lost by a few candidates who did not attempt Section C questions but, by and large, a good attempt was made in the paper. There was some evidence that candidates did not always 'read the question' carefully and, as a result, did not formulate a relevant answer.

Areas in which candidates performed well

Question 1: Most candidates knew the background to yoghurt-making and the cells involved in alcohol production.

Question 2 (a): Most candidates managed two separate variables (ie not both volume or both concentration) and reading information from the graph in (b) was well done.

Question 4 (c): Most candidates understood that model cells need to be dried before weighing.

Question 5 (b): Most candidates were aware of competition in plants.

Question 6 (a) and (b): Most candidates were very competent in food web information and general ecosystem material.

Question 8 (c): Most candidates understood the terms used in fertilisation.

Question 11 (a), (b): Most candidates could follow the path through the lungs and knew that diffusion was operating. They also knew features of alveoli.

Question 12 (b), (c): Most candidates knew the correct parts of the brain and knew ADH.

Areas which candidates found demanding

Question 1 (b) (ii): A large number of candidates were unable to link alcohol with petrol to form gasohol.

Question 4 (d): Whilst many candidates gave the correct model cell, the majority failed to state that this cell had the greatest difference in water concentration.

Question 5 (a) (i): It is still disappointing to find some candidates not using a proper scale on the x-axis or not using at least 50% of the graph paper.

Question 5 (a) (iii): Few candidates were able to formulate a valid conclusion — they were not linking the results with the aim of the investigation so were not discussing competition against percentage seedlings surviving.

Question 6 (c): Many candidates were awarded one mark here for energy loss. Very few linked this to the energy available to the heron for growth so missed out on the second mark.

Question 7 (d): Many candidates did not give answers that referred to production of material.

Question 8 (b) (ii): Poor understanding of meiosis was shown here. Candidates failed to mention homologous or paired chromosomes and then these chromosomes separating. Many were distracted by fertilisation and sex determination.

Question 9 (b): Candidates were not using the data from the table so were losing at least one mark. The second mark was not awarded due to candidates not being comparative in their answers.

Question C 1 A: Many candidates confused degradation with denaturing.

Question C 1 B: Few candidates used the diagram in their answers, failing to mention the lamp providing the light energy for the Elodea or that the CO₂ for stage two came from the water.

Question C 2 B: Candidates failed to mention that the hypothalamus detects **blood** temperature and many failed to realise that sweating and loss of heat by radiation are processes that occur all the time. Vasodilation of **capillaries** was mentioned frequently and many candidates answered the question for both an increase and a decrease in body temperature.

Advice to centres for preparation of future candidates

General

Graph construction needs to be practised making sure that candidates know how to format a proper scale and not just use the figures supplied. Scales must be chosen to allow at least 50% of the graph paper to be used.

Percentages caused some problems this year (Question 5 (a) (v) and Question 10 (b) (i)) so spending some time working on percentage increase and percentage decrease would be beneficial.

Candidates should be encouraged to read each question carefully before attempting an answer.

Question 8 (a) had no support line and there was some evidence to suggest that many candidates were missing this out, so failing to gain a mark even though the instruction was in bold. If candidates are encouraged to read each part of the question it will hopefully reduce the frequency of this type of error in future.

Statistical information: update on Courses

Intermediate 2

Number of resulted entries in 2011	7,490
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Number of resulted entries in 2012	7,995
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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 100				
A	27.5%	27.5%	2,200	68
B	22.1%	49.6%	1,767	57
C	22.8%	72.4%	1,824	47
D	9.4%	81.8%	749	42
No award	18.2%	100.0%	1,455	-

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 SQA therefore 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 Business Manager 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.