



External Assessment Report 2010

Subject	Technological Studies
Level	Advanced Higher

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 overall response of candidates was mixed and some centres performed very well while others performed poorly.

All questions were accessible and in each case almost full marks were gained by some candidates.

The performance across the question paper this year was very even, with Section B attracting a broadly similar performance to Section A.

This year there were fewer candidates who achieved Upper A scores and almost 20% of candidates scored less than 30%, however, the question paper was of a similar level of demand to the previous year and, as such, the grade boundaries remain unchanged.

Areas in which candidates performed well

Question 5: Shear Force and Bending Moments. This question provided the best responses from candidates.

Question 2: PID control was also well attempted.

Question 9 (a) and (b): Method of Sections. The responses were generally much better than in previous years. It appears that asking for appropriate distances in part (a) has been helpful to candidates.

Areas which candidates found demanding

Question 6: The average score for this programming question was 43.6% of the available marks.

Question 8 (b): The Second Moment of Area calculation proved to be challenging for the majority with only a few exceptions. The required method here was to take the small centre square and add 2 x the narrow side-rectangle.

Question 10: this was very poorly attempted with an average score of only 34%. Many candidates provided responses with incomplete solutions throughout the question.

Advice to centres for preparation of future candidates

More emphasis should be given to astables, bistables and binary counters (D-type, J-K). (See Question 1 and Question 4.)

There is little evidence of candidates planning programs, using flowcharts or other methods. Candidates should be encouraged to plan programs prior to writing out instructions, as many candidates appear unable to correctly interpret written instructions. (See Question 3, Question 6 and Question 10.)

Calculation of Second Moment of Area for compound shapes is a topic that should be covered. (See Question 8.)

The short-cut method of calculating input resistor values in summing amplifier (Isb only high input) should be encouraged. This can save significant time, and avoids the need for long calculations. (See Question 10.)

Statistical information: update on Courses

Number of resulted entries in 2009	85
Number of resulted entries in 2010	90

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	25.6%	25.6%	23	67
B	14.4%	40.0%	13	58
C	14.4%	54.4%	13	49
D	8.9%	63.3%	8	44
No award	36.7%	100.0%	33	—

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.