



## External Assessment Report 2013

Subject(s)	Technological Studies
Level(s)	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 to this examination was of a very high standard.

The total number of entries was significantly lower than in 2012, but the candidate cohort this year was highly-focused and well-prepared, and appeared to find the question paper open and accessible.

## Areas in which candidates performed well

- ◆ Questions 1, 2, 3, 5, 6, & 7 (Section A): the average scores for these questions — across the whole candidature — were in the 71–77% range.
- ◆ Q10 (Section B): overall, candidates who attempted this question scored an average of 74%.

## Areas which candidates found demanding

- ◆ Candidates continue to find it challenging when they are asked to ‘explain the operation of the circuit...’ Written responses to Q8a) and Q10a) were poor, with the majority of candidates either *describing* the circuit, or providing an explanation that was not sequential, or did not clearly explain the required operation.
- ◆ Q4 (J-K counters): most responses did not correctly show *count-down* counters.
- ◆ Q10b): Schmitt trigger — many candidates selected the wrong threshold; c): Timing diagram — incorrect in most cases.

It may be noted that the areas of poor performance outlined above were all Applied Electronics: Counters/Timers etc.

## Advice to centres for preparation of future candidates

There were two areas of relatively poor performance in this year’s examination: Electronic systems: J-K counters, along with monostable and astable oscillators, proved to be challenging.

Centres are advised to ensure that candidates are given plenty of practice in developing a variety of circuits. Past SQA question papers are very useful in demonstrating the style of question and level of demand required.

‘Explain the operation of...’ questions continue to challenge candidates, as in previous years. It is important that engineers are able to communicate clearly and succinctly; candidates should be given frequent/regular opportunity to practise and improve their skills in analysing the operation of circuits and setting down explanations in a clear and ordered manner.

## Statistical information: update on Courses

Number of resulted entries in 2012	91
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Number of resulted entries in 2013	56
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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 200				
A	53.6%	53.6%	30	134
B	14.3%	67.9%	8	116
C	17.9%	85.7%	10	98
D	5.4%	91.1%	3	89
No award	8.9%	100.0%	5	-

## 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.