



## External Assessment Report 2012

Subject(s)	<b>Technological Studies</b>
Level(s)	<b>Intermediate 2</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 analysis of the 2012 Intermediate 2 examination found that it was fair, balanced and accessible with the full range of marks awarded in each question.

The Markers indicated that the Question Paper was set at a similar same standard to previous years and as a result the grade boundaries were not altered.

There was an increase in the percentage of candidates receiving an A–C award and this improvement in performance was confirmed by the Markers who suggested that this year's cohort was better prepared than in previous years.

## Areas in which candidates performed well

Question 3 (a): Most candidates knew how to convert from a wiring to logic diagram.

Question 5 (a): Candidates performed very well when calculating kinetic energy.

Question 10 (i): Most candidates attempting this question were able to state a renewable energy source.

## Areas which candidates found demanding

Question 1 (a) (ii): A high number of candidates were unable to describe why a system boundary is included with a sub-system diagram.

Question 1 (c) (ii): Candidates did not appear to know the meaning of the term *transducer* and many answered 'window blinds'.

Question 9 (a): A significant number of candidates could not name the diaphragm 3/2 spring return valve.

## Advice to centres for preparation of future candidates

### General

Candidates were better prepared for the Question Paper this year than previously but centres may wish to note specific aspects of the Course where poor performance was noted:

- ◆ Candidates often were unable to effectively use the Data Booklet when coding in PBASIC with simple syntax errors frequently seen. They also found the use of *for...next* and *if...then* commands challenging.
- ◆ Knowledge of voltage divider theory was poor with a high number of candidates unable to state the function of a variable resistor in a sensing circuit, or to carry out simple calculations to determine an output voltage.
- ◆ The principle of moments question was generally well answered although a small but significant number of candidates found calculating the beam reactions challenging, or else had the correct values but assigned to the wrong position.

## Statistical information: update on Courses

### Intermediate 2

Number of resulted entries in 2011	131
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Number of resulted entries in 2012	174
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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	41.4%	41.4%	72	72
B	22.4%	63.8%	39	61
C	9.8%	73.6%	17	51
D	1.7%	75.3%	3	46
No award	24.7%	100.0%	43	-

## **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.