



External Assessment Report 2014

Subject(s)	Technological Studies
Level(s)	Intermediate 2

The statistics used in this report are prior to the outcome of any Post Results Services requests

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

It was pleasing to see the increase in the number of candidates presented this year.

The question paper was found to be fair, balanced and accessible. The full range of marks was awarded in all questions.

The experienced setting team intended to produce a question paper of a similar standard to previous years, but a review of the item analysis suggested that there had been a slight increase in the overall level of difficulty. It was for this reason that the boundary was lowered by one mark across all grades.

Areas in which candidates performed well

Question 2(a)(i): The calculation of heat energy was consistently well answered.

Question 3: Candidates demonstrated a good understanding of combinational logic in all parts of this question.

Question 7(a): The free-body diagram was correctly drawn by the majority of candidates.

Question 10(a): Candidates were consistently strong calculating kinetic energy.

Question 11(c): The majority of candidates demonstrated a good understanding of the operation of the pneumatic circuit.

Areas which candidates found demanding

Question 1(a)(ii): Some candidates failed to state a function of the microcontroller memory types but instead responded with a characteristic such as 'non-volatile'.

Question 2(b): A number of candidates responded with a basic statement or one word answer rather than a description.

Question 4(b): Some candidates were awarded just one mark because they did not indicate that the length of the pneumatic time delay could be adjusted.

Question 5(b)(ii): Some candidates failed to use Ohm's Law to calculate the total circuit resistance.

Question 10(d)(i): Some candidates were unfamiliar with detail of the CMOS family and '5V' was a common response to the maximum operating voltage.

Advice to centres for preparation of future candidates

Centres may wish to address the following issues where difficulty was noted:

- ◆ The difference between 'state', 'describe' and 'explain' questions in terms of the length of response and amount of detail to be given could be made clearer to candidates.
- ◆ Candidates consistently answer **function** based questions with an either statement or description of a **characteristic** of the component or sub-system.
- ◆ Candidates' use of PBASIC was generally good, but some careless syntax errors were noted which could have been avoided with reference to the Data Booklet.
- ◆ Candidates' knowledge of CMOS IC family could be improved.

Statistical information: update on Courses

Number of resulted entries in 2013	181
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Number of resulted entries in 2014	191
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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	41.9%	41.9%	80	71
B	20.9%	62.8%	40	60
C	16.2%	79.1%	31	50
D	4.7%	83.8%	9	45
No award	16.2%	-	31	-

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.