



Principal Assessor Report 2007

Assessment Panel:

Technical Education

Qualification area

**Subject(s) and Level(s)
Included in this report**

Technological Studies Intermediate 2

Comments on candidate performance

General comments

The feedback indicated that the 2007 Question Paper was fair, balanced and accessible. The full range of marks was awarded in each question.

The grade boundaries remained identical to those set in the previous three years. This produced a very slight increase in the pass rate which reflected the small improvement seen in candidate responses this year.

Areas in which candidates performed well

Q2: calculations involving energy.

Q4: electrical circuit calculations.

Q8: description of the operation of a pneumatic circuit.

Q10: digital electronics – Boolean, completion of a truth table, wiring of ICs.

Areas which candidates found demanding

Q1: control diagrams – identifying a suitable input transducer and description of sequential control.

Q3(b): completing the block diagram to represent the architecture of a microcontroller.

Q4(b): the symbol and correct orientation of an LED.

Q5(b): voltage divider calculations.

Q8 (b) (ii): diaphragm actuator.

Q9(b): wiring of the electrical circuit.

Q10(d): correct position and orientation of a unidirectional restrictor to produce speed control.

Advice to centres for preparation of future candidates

Centres may wish to address the following areas of difficulty noted in this year's examination:

- A significant number of candidates showed a lack of basic knowledge of closed loop control and the role of an error detector within a control diagram.
- Developing flowcharts and PBASIC programs continued to be problematic with many candidates failing to access the Data Booklet for the correct symbols, binary values or PBASIC commands. Repeat fundamental errors were seen, for example setting the DDR using *let pins %00001111* etc.
- Calculations involving a voltage divider were consistently poorly answered.
- The symbol and correct orientation of an LED produced poor responses from a large number of candidates.
- The correct position of a unidirectional restrictor to control the exhaust air needs to be emphasised. In addition many candidates confused a diaphragm actuator with pilot air.

Statistical information: update on Courses

Number of resulted entries in 2006	197
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Number of resulted entries in 2007	207
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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	35.3	35.3	73	72
B	17.4	52.7	36	61
C	15.5	68.1	32	51
D	6.3	74.4	13	46
No award	25.6	100.0	53	-

General commentary on passmarks and grade boundaries

- While SQA aims to set examinations and create mark schemes which will allow a competent candidate to score a minimum 50% of the available marks (notional passmark) and a very well-prepared, very competent candidate to score at least 70%, it is almost impossible to get the standard absolutely on target every year, in every subject and level
- Each year we therefore hold a passmark meeting for each subject at each level where we bring together all the information available (statistical and judgmental). 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 senior management team at SQA
- We adjust the passmark downwards if there is evidence that we have set a slightly more demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- We adjust the passmark upwards if there is evidence that we have set a slightly less demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- Where the standard appears to be very similar to previous years, we maintain similar grade boundaries
- 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 are different. This is also the case for exams set in centres. And just because SQA has altered a boundary in a particular year in say Higher Chemistry 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
- Our main aim is to be fair to candidates across all subjects and all levels and maintain standards across the years, even as arrangements evolve and change.