

Principal Assessor Report 2003

Assessment Panel:

Technical Education

Qualification area

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

Technological Studies Intermediate 2

Statistical information: update

Number of entries in 2002	
Pre appeal	237

Number of entries in 2003	
Pre appeal	337

General comments re entry numbers

It is encouraging to see a significant increase in the number of candidates being presented this year. This was largely due to an additional 78 overseas candidates taking the subject as part of the SGA in Engineering. This FE group now accounts for 44% of all entries. It was also noted that 45 candidates (14%) sat the subject in S4.

Grade boundaries at C, B and A for each subject area included in the report

C 51%
B 61%
A 72%

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 syllabuses evolve and change

Comments on grade boundaries for each subject area

The pass mark for A was set at 72%, B at 61% and C at 51%. These grade boundaries were in broad agreement with previous years. However, the percentage of no awards has reduced by 8.8%. This was partially due to a conscious effort by the examining team to slightly reduce the degree of difficulty in order to bring the subject's National Rating closer to zero (National Ratings 2000: -0.54, 2001: -0.40, 2002: -0.66).

Comments on candidate performance

General comments

Candidates' responses indicated that the paper was fair and accessible. No individual question was consistently poorly answered and it was noted that the standard of descriptive responses had improved on previous years.

Areas of external assessment in which candidates performed well

Section A Questions: 3, 4, 5 and 8

Section B Questions: 9(e) and 11

Question 3: Calculations were well answered although Moments continues to be problematic.

Question 4: Good responses throughout.

Question 5: Conservation of energy well done although C level candidates had some difficulty with the maths associated with the transformation in (b).

Question 8: Well answered.

Question 9(e): Very good responses.

Question 11: On the whole, well answered with (b) allowing scope for differentiation between levels.

Areas of external assessment in which candidates had difficulty

Section A Questions: 6(a), and 7(b)

Section B Questions: 9(c) and 10(c)

Question 6 (a): Many candidates did not fully describe the ICs and few knew the name of the 74 series family.

Question 7 (b): In general, candidates demonstrated a limited knowledge of Pulse Width Modulation.

Question 9 (c): Certain candidates were unable to describe the operation of a voltage divider circuit.

Question 10 (c): Poor use of flowchart symbols and a limited knowledge of 'for...next' looping.

It was also noted that a number of candidates had difficulty expressing a value in binary and confused the most and least significant bits.

A small but notable number of candidates used 10 or 9.8 for 'g' rather than 9.81 as stated in the Data Booklet.

Recommendations

Feedback to centres

There are several areas of weakness that centres may wish to address. More emphasis needs to be placed on flowcharting with sub-procedures and the use of counting loops, together with Pulse Width Modulation and the reason for its use in motor speed control. In addition, candidates' understanding of analogue electronic circuits (consisting of voltage divider, transistor, relay and output sub-systems) needs to be developed further.

Once again there is some evidence to suggest that candidates from bi-level classes (Int2 with Higher) are performing less well than those in discrete Int2 groups.