

Principal Assessor Report 2003

Assessment Panel:

Technical Education

Qualification area

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

Technological Studies – Advanced Higher

Statistical information: update

Number of entries in 2002	
Pre appeal	117

Number of entries in 2003	
Pre appeal	133

General comments re entry numbers

The trend of increasing numbers seen in 2002 has continued into 2003 with an increase this year of some 14% over last year. Given that Advanced Higher has a fairly narrow appeal for school pupils, it is likely to take several years for new centres to fully appreciate the advantages of the new course over CSYS Technological Studies.

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

C: 50% B: 60% A: 70% Upper A: 85%

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 *a priori* grade boundaries applied in 2003 correspond to a reduction of 5 marks at C, B and A, and 2 marks at Upper A, compared with 2002.

This is consistent with the intention of the Examining Team to 'stiffen' the level of difficulty of the exam by 5% across the board, from 2002 to 2003, following a significant upwards shift in awards, from 2001 to 2002.

Comments on candidate performance

General comments

The vast majority of candidate scores lie between 30% and 95%, though 4 candidates scored less than 30% and one candidate scored 98%. There were no areas of the assessment in which full marks were not gained, though average marks for Q5 fell below the pass-mark (40% average score), and Q4 proved to be a bare pass (average score 55%).

Areas of external assessment in which candidates performed well

Questions 6 and 8

Low-level programming questions were very well done – clearly the transition from high-level language at Higher to low-level at AH is proving successful.

Questions 1 and 3

Applied electronics questions were also generally well attempted, with sound understanding of D-type and J-K bistables being demonstrated.

Areas of external assessment in which candidates had difficulty

Question 4

Perhaps an unexpected application of stepper motor control, using a mark/space ratio, contributed to a poorer overall response than had been anticipated for this low-level programming question.

Question 5

The mathematical content of Integrators (this year requiring double integration) proved very difficult for many candidates, with most failing to carry through the result of the first integration to the second stage. This is an area that needs greater emphasis in teaching.

Question 7

Candidates continue to struggle with the Method of Sections in solving Statics problems. Centres would be advised to try to find extra time on this important part of the Structures and Materials Unit.

Question 10

Candidates still find great difficulty in describing the operation of electronic systems, using appropriate terminology. Few provide sufficiently detailed, or logical, sequential responses.

Recommendations

Feedback to centres

Applied Electronics

Integrators – and the mathematical processes required for calculations – need much more emphasis than appears to have been given for the 2003 presentation.

Structures and Materials

Centres need to spend more time on the main elements of the Structures and Materials Unit, especially in respect of Method of Sections, also Shear Force and Bending Moment diagrams.

Descriptive Answers

Few candidates appear able to express themselves clearly and logically when providing descriptive answers, and they lose significant chunks of marks as a result. Regular exercises in describing or explaining processes and systems, throughout the session, would help to prepare candidates for the external assessment.