



Principal Assessor Report 2007

Assessment Panel:

Technical Education

Qualification area

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

Technological Studies – Advanced Higher

Comments on candidate performance

General comments

The examination was felt to be of a very similar standard to that of last year, with candidates overall performing largely at the same level.

Candidates still find difficulty in describing the operation of circuits, and in demonstrating knowledge and understanding of systems/devices through the use of appropriate technological terminology.

The Method of Sections question in Section A was answered better than has been the case in previous years, though was very much a standard, straightforward structure.

Areas in which candidates performed well

Q2 (assembler programming), Q3 (shear-force and bending moment diagram), Q6 (testing understanding of assembly language) and Q7 (Method of Sections) were all areas in which candidates generally performed well.

Areas which candidates found demanding

Candidates did not find Q1 (Schmitt trigger) very easy; in retrospect, this was probably not a good 'starter' question.

Q4 (J-K bistable) and Q5 (shift register and frequency divider) were also challenging for many candidates.

Q9 (mix of assembler programming and shear-force & bending moment diagrams) was the least popular of the Section B questions.

Advice to centres for preparation of future candidates

Many candidates continue to solve Method of Sections questions only by taking Moments; it should be noted that once a section has been taken, any of the three Conditions of Equilibrium may be applied, as in Nodal Analysis. The Method of Sections *does not preclude* the use of $\sum F_H = 0$, or $\sum F_V = 0$; use of these equations would in many cases facilitate the successful solution of a problem.

Confusion between 'sin' and 'cos' components of forces continues to be quite common, and could be avoided by simply calculating the unknown part of the angle, then always using 'cos'.

Statistical information: update on Courses

Number of resulted entries in 2006	128
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Number of resulted entries in 2007	97
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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	28.9	28.9	28	67
B	24.7	53.6	24	58
C	15.5	69.1	15	49
D	7.2	76.3	7	44
No award	23.7	100.0	23	-

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.