



Principal Assessor Report 2007

Assessment Panel:

Technical Education

Qualification area

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

Technological Studies - Higher

Comments on candidate performance

General comments

There was a continuing attempt in 2007 to ease the level of demand in Section A, and to slightly increase the level of demand in Section B; this was in order to enable candidates to gain a 'C' pass largely from marks gained in Section A, with Section B acting to provide the headroom for 'A' and 'B' grades, more than has been the case in the past. However, in many cases, 'C' candidates still gained as many marks in Section B as in Section A.

There was a general feeling that the examination was slightly less accessible in some parts than it was last year, and that the first two questions were not good 'settlers'. However, actual performance in Question 1 was very good, with candidates averaging 80% of the available marks.

Areas in which candidates performed well

Question 1 (combinational logic) was very well done. A very small number of candidates solved the question via a truth table, which was not required; this led to a complex boolean statement and subsequent logic diagram. The directly-produced boolean statement led to a simple solution which corresponded with the mark allocation for the question.

The Structures and Materials content in Section A (questions 4 and 8) was well answered – a welcome improvement on previous years! The nodal analysis part of question 10 was also fairly well done; this question was attempted by virtually all candidates.

Areas which candidates found demanding

Few candidates answered the 'explain' or 'describe' parts of questions well, the general level of response in these areas being very poor.

The quality of responses to Applied Electronics questions in Section A was disappointing. The transistor question (Q2) accrued an average of 35% of available marks, perhaps in some measure due to the inclusion of a MOSFET in the question. The level of responses in Q3 and Q7 (op-amps) was disappointing.

Very few candidates attempted Question 11, and the average gained was 40% of available marks; candidates may have been put off by the 7 'explain' marks.

Question 12 was not well done, but it appeared that many candidates ran out of time in this question.

Advice to centres for preparation of future candidates

Candidates continue to find 'explain' or 'describe' questions very difficult to answer. Many responses were not logically presented, and did not contain the appropriate technological terminology. In many cases also, rather than describing the operation of the circuit – c.f. Question 12(a) – candidates simply listed the constituent components in each part of the system.

Centres should consult the exemplification of answers to this type of question, published on the SQA website, and should spend some time in developing the ability of candidates to describe the function, or operation, of a system in a logical manner, including the use of appropriate technological terminology.

There are still problems with nodal analysis; many candidates are unclear on this method, and include forces acting at nodes other than the node under consideration. Confusion between 'sin' and 'cos' components of forces is very common, and could be avoided by simply calculating the unknown part of the angle, then always using 'cos'. This would help prevent confusion with the Physics approach also.

Centres should ensure that candidates understand the way in which marks are allocated; this would have obviated the problem a few candidates experienced with Question 1, where part (a) allowed only 1 mark for the development of the boolean statement – clearly not enough for the production of an 8-line truth table and subsequent multiple-term boolean. Better time management during the examination would also be possible with a clearer awareness of mark-allocation methods.

Statistical information: update on Courses

Number of resulted entries in 2006	769
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Number of resulted entries in 2007	770
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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	24.4	24.4	188	68
B	20.3	44.7	156	57
C	20.4	65.1	157	46
D	9.6	74.7	74	40
No award	25.3	100.0	195	-

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.