

## Principal Assessor Report 2005

**Assessment Panel:**

**Computing and Information Technology**

**Qualification area**

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

**Computing – Advanced Higher**

## **Statistical information: update**

<b>Number of resulted entries in 2004</b>	512
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<b>Number of resulted entries in 2005</b>	499
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### **General comments re resulted entry numbers**

Number of candidates is slightly less that last year's entry numbers but is still encouraging for the subject as a whole and demonstrates the fact that centres and candidates are seeing the benefits of undertaking Advanced Higher Computing.

## Statistical Information: Performance of candidates

### Distribution of awards including grade boundaries

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark- <b>100</b>	-	-	-	-
A	18.6	18.6	93	70
B	28.3	46.9	141	60
C	30.3	77.2	151	50
D	11.8	89.0	59	45
No award	11.0	100.0	55	-

### 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.

### Comments on any significant changes in distribution of awards/grade boundaries

In 2004 the grade boundaries were:

Upper A = 83

Lower A = 70

B = 60

C = 51

The grade boundary for a pass at 'C' level has reduced by 1% this year – the other grade boundaries have remained the same.

The examination was felt to be fair and the standard of the examination had remained largely unchanged. However, there was a slight, but necessary, tightening in the marking instructions of some areas of the Software Development questions this year, which was felt to have increased the level of demand for C grade candidates

## Comments on candidate performance

### General comments

- Overall markers commented that only a small number of candidates gave high quality responses. Most candidates lacked detailed technical knowledge.
- Few candidates made clear connections between the knowledge of the course and the problem scenario being examined.
- There is some evidence that candidates have analysed the structure of the paper from previous years.
- Candidate responses to the larger extended response questions were generally poor with a lack of technical language being used and a lot of text written with very little clear understanding of the subject matter being communicated. Candidates need to consider the structure of responses to extended questions in order to gain higher marks. One or two good examples showed a high degree of structure in the response with the use of tables and labelled diagrams.
- The majority of candidates answered question 1 as their choice in Software Development, question 4 in Artificial Intelligence, question 7 in Computer Systems and question 10 in Data Communications. This may indicate that the choice in questions is not really taken up by candidates due to the amount of reading required to make that choice.

### Areas of external assessment in which candidates performed well

Candidates performed better in questions where recall of terms and technical detail from each of the units was required.

#### **Software Development:**

Question 1 was attempted by the majority of candidates. Most performed well in describing what is contained in a feasibility report. Candidates that answered question 2 gave good descriptions of techniques to make code reusable and the stages of testing.

#### **Artificial Intelligence:**

Questions 3 and 4 were attempted by the majority of candidates. The majority of candidates undertaking questions in this option were able to draw the semantic net and showed good understanding of questions 4 (a) to (d)

#### **Computer Systems:**

Questions 6 and 7 were attempted by most candidates. There were some good answers to question 7 (b) on writing assembly language.

#### **Data Communications:**

Questions 9 and 10 were attempted by most candidates. And yet the candidates who did answer question 11 did markedly better. Candidates answered question 11 (b) on network hardware devices very well.

## Areas of external assessment in which candidates had difficulty

- The discriminating questions which involved integration, evaluation and synthesis were not attempted well with many candidates making little attempt to relate knowledge to problem scenarios.
- Use of technical language is poor by many candidates.

### **Software Development**

Candidates did not refer back to the question stem, or relate their responses to the scenario given. This is a continuing theme from previous years and it would have been hoped that candidates would now be making specific reference to the background text and not just making general comments about “staff” or “clients”.

Responses to question 1 (d) on describing a design methodology was disappointing with candidate answers showing very little depth beyond that expected at Intermediate / Standard grade level. Question 1 (e i) was also poorly answered with most candidates simply referring to the characteristics of a user friendly interface.

### **Artificial Intelligence**

In Artificial Intelligence, although the problem solving components were well done overall, areas of application which required a greater use of technical language and a depth of response more appropriate to Advanced Higher level were very poorly answered.

### **Computer Systems**

Candidate responses in assembly language tended to be unclear and some other answers lacked depth of treatment. Question 6 (b) was thus poorly done. Candidates demonstrated poor knowledge of operating systems.

### **Data Communications**

Very few candidates demonstrated secure knowledge in aspects of Data Communications.

## **Recommendations**

### **Feedback to centres**

Questions relating to recall of knowledge were generally well done, but extended responses in problem solving/analytical approach were lacking in the depth required at Advanced Higher.

Candidates should be encouraged to consider the structure of responses to extended questions and must learn to relate responses to the context of the question.

#### **SOFTWARE DEVELOPMENT**

- Candidates demonstrated an ability to describe the contents of a feasibility report.
- Application of the Software Development Process to the scenario outlined in the question paper was not well done. Candidates did not relate back to the stem of the question or apply their knowledge to the scenario.
- Candidates were unable to demonstrate an understanding beyond that expected at Intermediate / Standard Grade levels of the development and description of a design methodology.
- Very few candidates attempted Q2

#### **ARTIFICIAL INTELLIGENCE**

- The development of search trees was well done as was the drawing of semantic nets and parsing.
- Candidates need to be encouraged to develop their use of technical language more appropriately.
- The depth of response in relation to questions which required evaluation and synthesis were often not at an appropriate level for Advanced Higher.
- Very few candidates attempted Q 5.

#### **COMPUTER SYSTEMS**

- Many candidates wrote large extended responses to some of the questions but failed to give an appropriate level of depth of treatment or attention to the technical detail required at this level.
- When comparing Operating Systems candidates still make trivial comparisons between Operating Systems which are not significantly different.
- Many candidates could not describe the purpose of a section of code written in assembly language. They merely restated what was given in the question stem.
- Very few candidates attempted Q 8.

#### **DATA COMMUNICATIONS**

- Very few candidates demonstrated secure knowledge in many aspects of Data Communications and real understanding of technical aspects of networking is often missing from candidate responses.
- Very few candidates attempted Q11 but those that did gained good marks.