

Principal Assessor Report 2004

Assessment Panel:

Computing and Information Technology

Qualification area

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

Computing, Advanced Higher

Statistical information: update

Number of entries in 2003 (Pre Appeal)	495
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Number of entries in 2004 (Pre Appeal)	512
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General comments re entry numbers

Numbers continue to grow slowly but steadily. This healthy increase is encouraging for the subject as a whole and demonstrates that more centres, and candidates are seeing the benefits of undertaking Advanced Higher Computing.

Statistical Information: Performance of candidates

Distribution of awards

A	19.5%
B	30.1%
C	29.7%
D	10.9%
No Award	9.7%

Comments on any significant changes in percentages or distribution of awards

In 2003 the grade boundaries were:

Upper A = 83

Lower A = 70

B = 60

C = 51

Grade Boundaries remained unchanged from Diet 2003.

There is a slight drop in the number of candidates being awarded an A pass compared with the high of last year this reflects the overall quality of candidate responses at this level.

Grade boundaries for each subject area included in the report

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
A	19.5	19.5	100	70
B	30.1	49.6	154	60
C	29.7	79.3	152	51
D	10.9	90.2	56	
No award	9.7	99.9	50	

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 grade boundaries for each subject area

These were the same as last year and reflect an unchanged level of demand in the Question paper.

Comments on candidate performance

General comments

- High quality responses were noted from a small number of candidates. There is some evidence that some of these candidates have analysed the structure of the paper from previous years.
- Candidate responses to the larger extended response questions (8 or 12 marks for example) 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.
- Few candidates make clear connections between the knowledge of the course and the problem scenario being asked about.
- The majority of candidates answered question 1 as their choice in Software Development, question 4 in Artificial Intelligence, question 8 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 Knowledge and Understanding questions where recall of facts and technical detail from each of the units was required. These questions tended to be awarded with full marks.

Software Development:

Q1 was attempted by the majority of candidates. Most performed well in recalling the stages of the software development process.

Artificial Intelligence:

Qs 3 and 4 were attempted by the majority of candidates. Candidates undertaking questions in this option were generally well prepared and were able to communicate more clearly than in other unit.

Computer Systems:

Qs 6 and 7 were attempted by most candidates.

Data Communications:

Qs 9 and 10 were attempted by most candidates. This option was not as well done as the others. Discussion of hardware involved in data communications was well done by some.

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 with inappropriate use made in many contexts.

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”.

Very few candidates made any attempt to develop algorithms (Q1) or data flow diagrams (Q2) and those that did showed very little depth beyond that expected at Intermediate / Standard grade level.

Artificial Intelligence

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

Computer Systems

Candidate responses in assembly language tended to be unclear and some other answers lacked depth of treatment.

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 recall the stages of the Software Development Process.
- 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.
- Development of algorithms and data flow diagrams was attempted by few candidates and those who did were unable to demonstrate an understanding beyond that expected at Intermediate / Standard Grade levels.
- Very few candidates attempted Q2

ARTIFICIAL INTELLIGENCE

- Candidates undertaking questions in this option were reasonably well prepared and were able to communicate more clearly than in other unit.
- 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.
- Treatment of network etiquette remains at a very trivial level despite questions clearly looking for

a more in depth response.

- Few candidates have a secure understanding of OSI.