

Principal Assessor Report 2006

Assessment Panel:

Computing and Information Technology

Qualification area

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

Computing - Advanced Higher

Comments on candidate performance

General comments

In general, markers reported that candidates did not seem to be well prepared for the external exam. Candidates were not reading the questions properly and paid little attention to the context. 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.

Questions based on new content were poorly answered especially in the Software Development and Developing a Software Solution section.

Candidates' responses to questions requiring code or pseudocode to be written were particularly poor. Markers were surprised at this poor response since much of the knowledge required was essential for candidates' practical work.

The general consensus from markers was that the candidates who opted for the Computer Architecture section performed less well than candidates who opted for Artificial Intelligence or Computer Networking. Of the four sections in the paper, performance in the compulsory section of Software Development and Developing a Software Solution was the poorest.

Areas in which candidates performed well

In general markers reported that candidates performed better in their optional section than in the Software Development and Developing a Software Solution section.

Software Development and Developing a Software Solution

Most candidates could describe the bubble sort and showed an understanding of how a binary search works.

Most candidates understood the concepts of stack and queue

Candidates had the idea of open and close file

The general idea of a software feature to locate a problem was understood.

Artificial Intelligence

All candidates could identify goal state and intermediate state; most candidates could successfully draw most of the search tree required

Candidates were able to identify two heuristic search techniques.

Virtually all candidates answered question 7 correctly.

Most candidates could convert frames to a semantic net

Most candidates understood certainty factors and were able to write the IF ... THEN rule

Nearly all candidates were able to label the outer lines of the object in question 11.

Computer Architecture

No areas of this section were identified as being consistently well answered.

Computer Networking

No areas of this section were identified as being consistently well answered.

Areas which candidates found demanding

Software Development and Developing a Software Solution

Question 2 was answered very poorly – very few candidates had any knowledge of object oriented language. Some candidates answered in terms of VB instead of OOL.

In question 3, candidates could describe reasonably well the bubble sort but could not **do** the sort. No candidate coped with the problem solving part of (iii) but some could brain dump the facts. Most candidates showed an understanding of how a binary search works but few candidates could write any code/pseudocode (usually just locating middle).

Only about a third of candidates were able to define a 2d array but hardly any paid attention to the variables mentioned in part (ii). Most candidates understood stack and queue but didn't have the detail to deal with stack pointer.

Artificial Intelligence

Most candidates could successfully draw the search tree required but few understood the term production rules.

Some candidates understood the heuristics however too many gave the answer 'rule of thumb'. Candidates failed to relate 6(c) to the search tree shown. Simplistic answers for 6 (d) demonstrated a lack of understanding of the more subtle differences between the two types of searches.

Very few could write rules for 8(c) and responses to 8(d) and 9(b) were simply English translations of the rules, with no mention of recursion.

Few candidates referred to the sentences in question 12 and question 13 was very poorly answered by most.

Computer Architecture

Candidates basically found all of this section demanding – no particular area was identified as being more demanding than the rest.

Computer Networking

Candidates found difficulties in the comparisons of bandwidth in 21(a)(i) and standards used in 21(c)(i)

Although candidates showed good knowledge of full, incremental and differential backups in 21(b), they were unable to select and justify a strategy for their use in the described scenario.

Few candidates were able to describe how public key encryption in question 22(d) and the role of HTTP in question 23(c) would be used in the particular scenario described for each question.

Advice to centres for preparation of future candidates

Centres should ensure that the new content in AH Computing is covered.

Questions relating to recall of knowledge were generally better done than those requiring extended responses in problem solving situations. Answers to problem solving questions lacked 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.

Centres should encourage candidates to properly read questions and answer the question that is being asked. For example:

- in question 1a candidates were asked to state two **benefits** of a feasibility study. Most candidates simply wrote down a description of a feasibility study
- in question 1c (i) candidates were asked for 3 factorswhen designing the user interface accessed on the WWW. Most candidates simply described a user interface.
- in question 12a candidates were clearly asked to refer to the given sentences in their explanation. Very few candidates mentioned the given sentences.
- in question 22d candidates were asked to describe public key encryption in a situation – a description that does not mention the scenario is not appropriate.

Statistical information: update on Courses

Number of resulted entries in 2005	499
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Number of resulted entries in 2006	450
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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 - 200	-	-	-	-
A	17.3	17.3	78	130
B	21.8	39.1	98	110
C	26.4	65.6	119	90
D	13.8	79.3	62	80
No award	20.7	100.0	93	-

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.