



**Principal Assessor Report 2007**

**Assessment Panel:**

**Computing and IT**

**Qualification area**

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

**AH Computing**

## Comments on candidate performance

### General comments

In general, Markers reported that candidates' performance in the written paper had improved on last year's performance. Candidates' knowledge of the new content seems to have improved but questions linked to a scenario were still generally not well done – the average mark achieved by pupils for each of this type of question backs this up. Candidates did not always pay attention to questions requiring **descriptions** or **explanations** – in these type of questions candidates often did not provide sufficient detail. Candidates' answers to theme based questions are poor.

### Areas in which candidates performed well

#### Software Development and Developing a Software Solution

- 1(a)(i) Most candidates knew two other aspects of Feasibility Study
- 2(b) and 5(b)(ii) There was a vast improvement in candidates' ability to write pseudocode for algorithms with which they were familiar
- 2(c) Candidates clearly knew and were able to describe two methods of locating software errors.
- 3(b)(i) Most candidates were able to sort the list

#### Artificial Intelligence

- 6(a) As always drawing the search tree was well done by virtually all candidates. This is something candidates have come to expect and is a good settling question in the AI section
- 6(b)(ii) The majority of candidates gained two marks here
- 10(a)(i) The writing of rules was good
- 13(a) This integrated question on testing was answered very well

#### Computer Architecture

- 15 In general this question was well answered - in particular, candidates answers to the description of Direct Memory Access and features of RISC architecture was notably well done.
- 18(a) Candidates knowledge of first fit, best fit or worst fit algorithms was good

#### Computer Networking

- 21 Candidates gained good marks in their writing of HTML code and knowledge of Java and ActiveX
- 22(c) The description of denial of service attack was fairly well answered.

## Areas which candidates found demanding

These are the questions and areas of concern that markers identified both during the marking process and from the summary of average marks obtained in each question.

### Software Development and Developing a Software Solution

- 1(b)(ii) Candidates description of items included in the ORD lacked detail and their resultant answers to question 1(b)(iii) were disappointing
- 1(c) This question from the Developing a Software Solution section was poorly answered
- 2(a)(iii) This was one of the areas where candidates did not link their answers to the scenario. This question should have been answered in terms of solving the Sudoku puzzle.
- 3(b) Candidates showed limited ability to compare the sort algorithms in any meaningful way
- 3(a) Candidates showed a poor understanding of record data structures
- 4 There is still shortfall of knowledge of OOP in candidates' from some centres – on the other hand there was a significant improvement in this area for candidates at other centres.
- 5(b)(i) Surprisingly few candidates were able to work out the number of comparisons required.

### Artificial Intelligence

- 6(b) Candidates were not clear on three differences between a state space graph and a search tree
- 7(b)(ii) The answers to this question on putting best first in context were very weak
- 8(b)(i) Candidates ability to write two Prolog rules on inheritance was very disappointing
- 9(b) The explanation of list processing was very poor
- 12/13(b)(iii) Very few candidates were able to give an example of learning by analogy or an ambiguity that can occur during pragmatic analysis.

### Computer Architecture

- 16 Candidates continue to mix up **branch prediction** and **branch predication**
- 17(a)/(b) This was very poorly answered – candidates clearly did not know this content
- 18 Not related to context – speedy processing of input/output requests
- 18(d) This question was very poorly answered – candidates seemed to be looking for a complexity that was not there

### Computer Networking

- 19(b)(i)/21(e) Candidates did not know the technical details of communication protocols.
- 20(b)(ii) Candidates knowledge of the detail of wireless standards was poor
- 22(a) This question was poorly answered – candidates did not link their answer to the scenario
- 22(b) Poorly done – new context not asked before. Answers and phrasing not linked to scenario

## **Advice to centres for preparation of future candidates**

When candidates are defining a 2D array they should remember to include a suitable data type.

Teachers/lecturers should ensure clarification of the difference between:

- the number of passes and the number of comparisons in the sort algorithm
- the definition of a record type and the declaration of variables based on that type.

Candidates should practice writing answers to questions that require a link to a scenario

Candidates would benefit from practical experience of OOP

Teachers/lecturers should ensure candidates are aware of the unifying themes in the course.

## Statistical information: update on Courses

Number of resulted entries in 2006	450
------------------------------------	-----

Number of resulted entries in 2007	349
------------------------------------	-----

## 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	19.5	19.5	68	140
B	24.1	43.6	84	120
C	27.2	70.8	95	100
D	12.3	83.1	43	90
No award	16.9	100.0	59	-

### 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.