External Assessment Report 2015

Subject(s)	Computing
Level(s)	Advanced Higher

Comments on candidate performance

General comments

Performance in the exam was better this year than previous year particularly in the Software Development and Developing a Software Solution. Candidates were familiar with the content and level of response required in this area. Some problem solving questions set in an unfamiliar context were demanding and proved to be discriminators between candidates. The binary search algorithm proved demanding for many candidates with responses varying greatly in standard. Candidates are now used to defining record structures and performance in this was generally good. However, the question on integration of modules proved demanding for some candidates. The majority of pupils were competent in the bubble sort with fewer pupils achieving full marks in selection sort. Performance in the optional topics was broadly in line with previous years.

Areas in which candidates performed well

Question 1 (b) (i): Most candidates were familiar with aspects of feasibility and performed well in this area.

Question 2 (a): Most candidates could create a record structure and declare a variable of the record type.

Question 2 (d): Most candidates are familiar with error location techniques.

Question 4 (a): Most candidates were skilled in the bubble sort traversal of an array.

Question 5 (a) & (b): Candidates are now familiar with the theory of how to construct a program that uses OOL and the benefits of this.

Question 5 (c) (i): Most candidates could correctly apply the use of a trace table.

Question 6 (a): Most candidates could express clearly the common stack errors.

Question 7 (b) (i): Most candidates correctly constructed the search tree.

Question 9 (d): Most candidates understood the recursive splitting of a list into head and tail for the member rule.

Question 10 (c) (ii): An improvement in the standard of the descriptions of the best-first search algorithm in unfamiliar contexts.

Question 16 (a) (i): Many candidates performed well on the tracing of the assembly language program.

Areas which candidates found demanding

Question 1 (b)(ii): A more problem solving question which challenged pupils to consider uses of the feasibility study which proved to be differentiating.

Question 2 (c)(i): Some candidates did not take on board the stem of the question stating that each module was correct and to problem solve other issues e.g. calls to procedures with incorrect parameter types etc.

Question 3 (c) (i): There was a wide variety in standard of response for this question with candidates finding it challenging to identify the mid-point, adjust lower and upper bounds or to construct IF statements which compare with array item at middle instead of the index 'middle'.

Question 6 (b)(i): Some candidates did not gain the second mark by not going in to more detail of stack operation.

Question 8 (a): Some candidates had a very superficial understanding of minimax e.g. used in two player adversarial games but could not describe its operation in any detail.

Question 8 (c): Some candidates did not attempt to answer this question in the context of the Nim scenario presented.

Question 9 (c): The writing of Prolog rules remains challenging for many candidates.

Question 10 (e) (ii): A number of candidates could not apply the Waltz algorithm.

Question 12 (a): Some candidates have a poor understanding of how parsing is applied to a sentence particularly the split of the sentence into noun phrase and verb phrase.

Question 13 (b): Some candidates did not express the performance gain when using cache.

Question 17 (a) & (b): Some candidates did not understand the use file attributes for security.

Question 18 (d),(e) & (f): Problem solving question on scheduling techniques proved challenging for some candidates.

Advice to centres for preparation of future candidates

General

This is the final year of this exam, and this Course. The content of the new Advanced Higher Computing Science Course will be significantly different. Further details of the new Advanced Higher Computing Science can be found SQA's website.

Statistical information: update on Courses

Number of resulted entries in 2014	440

Number of resulted entries in 2015	509

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	35.0%	35.0%	178	142
B	25.5%	60.5%	130	122
C	24.4%	84.9%	124	102
D	7.1%	91.9%	36	92
No award	8.1%	-	41	-

For this Course, the intention was to set an assessment with grade boundaries at the notional values of 50% for a Grade C and 70% for a Grade A. However, the question paper proved to be, unintentionally, less demanding and a two mark movement from the notional was applied.

General commentary on grade boundaries

♦ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.

♦ Each year SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). 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 management team at SQA.

♦ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.

♦ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.

♦ Where standards are comparable to previous years, similar grade boundaries are maintained.

♦ 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 and the mix of questions are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in say Higher Chemistry this 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.

♦ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.