ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate in Education

Computing 2510

COMP1   Problem Solving, Programming

Data Representation and

Practical Exercise

Report on the Examination

2009 examination - June series

This Report on the Examination uses the <u>new numbering system</u>

General

Prior to the release of the Preliminary Material on 1 April, AQA notified centres of the Programmer Support e-mail facility and many teachers made use of this. The intention was that it would be solely for the purpose of a centre that needed to make changes to the Skeleton Program code because of the programming environment that it was using. What was not reasonable (or the original intention) was for centres to try to use the Programmers to resolve problems with the running of the programming software on their institution's network or problems with their programs based upon teachers' guesses at the content of the question paper. Teachers also used this as an opportunity to contact the Programmer and discuss other issues, often about the relative merits of the code! If a Skeleton Program has been amended with the approval of a Programmer, centres are reminded that it is a requirement that a single copy of the amended Skeleton Program code listing be enclosed with candidates' Electronic Answer Document and sent to the examiner. This was often not done in 2009.

Centres are reminded that only the eight languages on the supported list are acceptable for the examination. Requests for the use of other languages will be refused. Candidates should be encouraged to use indentation in their code. (For Python this is a feature of the language itself.) There was feedback from Examiners that often, where no indentation had been used, it made the code extremely difficult to follow.

The Electronic Answer Document

The Electronic Answer Document (EAD) was released to centres on CD-ROM Disk 1 many weeks prior to the examination. Centres were encouraged to allow their candidates to practice using it prior to the examination in the hope that, with this preparatory work, candidates would have gone into the examination confident in using the EAD. There was clear evidence, however, that some candidates had not done this as AQA were contacted following the examination to explain that candidates had been unable to include their screen shot evidence in the EAD and that all the candidate's screen shot evidence was to be found at the end of the script.

The majority of candidates successfully pasted any code and screen shots into the rows of the EAD, probably the direct result of good preparation by the teacher. Candidates need to be well prepared for the production of screen shot evidence and clearly understand before they sit down to the examination that they are able to paste the 'active window' into their EAD document or crop a capture of the complete screen.

The note in the *Instructions and Guidance to Centres* to delete two of the answer rows from the EAD had clearly been acted upon prior to the examination by the vast majority of centres, as also had the erratum notice to delete the final blank line from the Phrases.txt file. Full credit was given to candidates where it was suspected that the latter had not been done as their screen shot for question 44 showed the number of phrases as 25.

For the 2010 examination, centres will be asked to ensure that print-outs are single-sided only. Staples or ties such as treasury tags (supplied by the centre) should be used and positioned in the top left hand corner to hold each candidate's EAD together.

Question 1

For question 01 the explanation of what is meant by a pixel was generally not well answered with very few candidates gaining the full 2 marks. The 'smallest picture element' was required for 2 marks to be awarded.

In question 02 most candidates appreciated how the memory contents shown were arrived at from the grid of pixels given in the question. Some candidates did not read the rubric and gave the answer for question 03 in binary.

For question 04 all that was required was a statement which described each colour being represented by a different number. Some candidates gave detail about numbers mapping to the various amounts of red, green and blue for each colour which was not expected, but was creditworthy.

In the final part of the question (06) despite being popular on the legacy CPT1 paper, answers describing vector graphics were disappointingly poor. Candidates failed to describe the two key points that any drawing is built up as a series of drawing objects and these drawing object types each have their own set of defined properties. Candidates were often unable to give a clear explanation for question 06, but were then able to name typical properties for a circle object.

Question 2

All of question 2 was well answered by the majority of candidates, including the encoding of a fixed point number which was new to the AS specification.

Question 3

Again, this topic was new to the specification, but apparently well understood by most candidates. The candidate's wording given for question 12 had to make it clear that the candidate was describing a 'state'; hence 'up' would not have scored a mark. However, 'going up' gained credit. Some candidates' misunderstanding was manifest when they wrongly described some action by the user of the lift.

Question 4

The format of this paper – where candidates were required at an early stage to program a task from scratch for a relatively straightforward specification - seemed to work well and a large number of candidates scored the maximum seven marks for the program source code. The question assessed the candidate's ability to implement the given problem description using the basic constructs of a high level language. However, candidates need to be made aware that the algorithm given had to be seen as a formal specification where the wording in any output or user prompts in their program code had to match exactly that given in the algorithm. The mark scheme reflected this and, as a result, candidates frequently lost marks for their screen shots because of their lack of attention to detail.

Question 5

Questions 19 to 27 required candidates to identify certain features of the Skeleton Program and this was generally well answered. Many candidates did not associate the term '*pre-defined function*' to mean a built-in function and hence did not score the mark for question 21.

For question 29 candidates were able to describe the condition which controlled the loop 'PhraseOK=True' and to describe for question 30 that the consequence would be a continuous loop. However, the explanation of why the programmer had used a 'For' loop was often poor with candidates unable to give a convincing explanation for this choice (and not a 'repeat-until' structure). Also candidates were unable to use precise language to describe a 'known' number of iterations.

Question 6

This question was well answered with many candidates scoring the maximum 10 marks. Better answers for question 34 scored the final mark by describing a Boolean flag or an integer value of 1 indicating that a particular letter had been guessed. If the candidate described the letter itself stored as the indicator, then this was deemed creditworthy.

There was possible ambiguity between the wording of the stem for question 37 and the statement in the Preliminary Material that 'An entered letter is never stored more than once.' As a result an answer of either yes or no for question 37 scored the 1 mark and this followed through into the marking of question 38.

Question 7

By this stage of the examination, weaker candidates were either starting to find the paper challenging or were struggling to complete the paper in the two hours. Attempts at this question ranged from not attempted (which were relatively few) to a completely correct solution. The question – similar to question 5 – required that the candidate followed precisely the specification given to gain full marks. It was suspected that many candidates' practice for the examination had included the coding of a guess of the complete phrase and so included this code even though it had not been asked for in the question. Candidates should be reminded of the need to answer the question set; not one that they wish had been set! Candidates seemed to understand fully what was meant by a 'procedure/function stub' and followed the instructions to produce all the evidence required.

Question 8

The majority of candidates had clearly read the suggestions in the Preliminary Material and were well prepared for this task. As a general principle, no credit was given for any screen shot evidence - e.g. question 44 - which was not supported by relevant and plausible code.
The able candidates had no difficulty answering this question and often gained very close to the maximum mark. Common shortcomings were solutions which read the phrases into an array which had been set to a particular size (24 or 25) and so assumed prior knowledge of the number of phrases in the file.

For question 45 a common shortcoming was code which generated a random number between 1 and 24, not 1 and 'the computed number of phrases in the file'.

Many candidates for question 49 included a complete listing of their final program code (possibly because this was a requirement on the COMP1 Specimen Paper). This was not in the rubric of the operational examination question.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results Statistics** page of the AQA Website.