



General Certificate in Education

Computing 6510

**CPT4 Processing and Programming
Techniques**

Report on the Examination

2008 examination - January series

Further copies of this Report are available to download from the AQA Website: www.aqa.org.uk

Copyright © 2008 AQA and its licensors. All rights reserved.

COPYRIGHT

AQA retains the copyright on all its publications. However, registered centres for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to centres to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales (company number 3644723) and a registered charity (registered charity number 1073334). Registered address: AQA, Devas Street, Manchester M15 6EX
Dr Michael Cresswell Director General.

General

The paper was accessible to most candidates and there were some very good responses. It was also pleasing to see that every question was attempted by most candidates.

There still seems to be a number of candidates not prepared adequately for this paper. Many candidates seem to rely on their ability to operate a PC rather than the knowledge learned from studying the subject. As a result, some of the questions that were largely standard bookwork showed that candidates had not learned even basic facts. It should be emphasised that candidates should use the correct technical terms in answering questions and that they should answer the questions that are set, specifically. Far too many candidates write the answer to some other question that was set previously in the same area. There were a number of examples of answers to a different question being given by candidates. A substantial number of candidates were unable to express their answers clearly and this prevented them from obtaining some of the marks available.

Question 1

Well-prepared candidates found this very straight forward and many obtained good marks. Some candidates, however, were clearly not well-prepared. In part (d) many candidates were unable to complement the negative mantissa. The role of the exponent was generally understood but converting the resulting bit pattern into a decimal value was not. There were also a number of candidates who were unable to recognise that, although the mantissa was negative, the exponent was positive. Part (e) was standard bookwork but it presented a real challenge with few candidates obtaining full marks. Marks were often lost due to the candidates being unable to express themselves properly.

Question 2

This question identified the candidates who had studied the subject adequately but there were also many badly expressed answers that did not get the marks available. Marks were often lost in part (a) by candidates giving the same point in two different ways. For example, stating that the user and the computer are in two way communication in an interactive system and that they are not in a batch processing system will only obtain one mark. Candidates were able to score well in part (b) with many good responses. Part (c) presented a challenge as candidates did not always answer the question set. It also identified how many candidates did not understand the way that a scheduler operates. Part (d) was very disappointing with few candidates realising that a queue was required.

Question 3

This question produced very different results in the various parts. Part (a) was answered much better than similar questions that have been set in the past. Candidates do seem to have some knowledge of disk addresses. Unfortunately it was rare to find a candidate who obtained full marks. A number of candidates gave sector and block or track and cylinder as two parts of the address. Unfortunately answers to part (b) were very disappointing. Few candidates seem to understand the operation of a disk buffer and why it is required. Part (c) presented an even bigger challenge. The stem made it clear that (c)(i) was referring to an interrupt generated by the disk drive controller. Many answers referred to interrupts that had been generated by the operating system or other software. The vectored interrupt mechanism is not understood by a large number of candidates. Many candidates simply described the general operation of the

interrupt mechanism with no regard to the question. On the other hand those candidates who could describe the vectored interrupt mechanism often scored very well in (c)(ii) and (c)(iii).

Question 4

The class diagram was a challenge to most candidates. Most candidates assumed that it was an inheritance relationship. As a result they often lost marks later in the question as well. Class definitions were given in this question and this should have allowed candidates to score very highly in part (b). This was not the case as many candidates did not read the question carefully enough. Very few candidates realised that Person and BookLoaned needed to be of types Borrower and BookCopy respectively. While many candidates realised that the solution to part (c) was to add an additional variable, many candidates seemed to think that an extra procedure was required.

Question 5

It was pleasing to see that most candidates attempted this question. The instruction set provided in the question was sometimes ignored and, as a result, those candidates failed to obtain many marks. Candidates sometimes ignored it completely while others added their own codes to the list provided. Part (a)(i) identified many candidates' inability to express themselves clearly. Many answers stated that a 1 would be produced if both the inputs were 1 but failed to state what happened if any other input was provided. Quite a number of candidates obtained full marks for part (b) but common mistakes were using invalid opcodes and multiplying by #0A rather than #10.

Question 6

Most candidates obtained the mark for part (a). It was also very pleasing to see the number of candidates who were able to correctly trace the algorithm. Many candidates obtained good marks on this question. Although many candidates did go wrong with the trace, very few candidates failed to attempt it.

Question 7

Candidates are still failing to realise the importance of the correct case in their answers to logic program questions. Many marks were lost by this fundamental error. There were also a large number of responses that were written very badly. It should be emphasised that the candidates must make it clear which case the letters are in. Many candidates made the first letter larger than the rest of the letters of a variable name even when the shape was that of a lower case letter. Most candidates obtained 2 or more marks for part (a). The most common mistakes were using the wrong case or just leaving out one of the facts. In part (b) the most common mistake was, once again, to use the incorrect case. Part (c) presented more of a challenge to candidates. It was surprising that more candidates did not realise that using the father rule simplified the answer.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](http://www.aqa.org.uk/over/stat.html) page of the AQA Website (<http://www.aqa.org.uk/over/stat.html>).