



General Certificate of Education

Computing 6510

CPT4 Processing and Programming Techniques

Report on the Examination

2007 examination - January series

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Set and published by the Assessment and Qualifications Alliance.

General

Many candidates found the paper accessible and there were some very good responses. Even the weakest of candidates found that there was something they could have a go at while at the same time the paper presented a challenge for the most able. As a result there were some parts of the paper that were very well done while other areas presented an impossible hurdle for many candidates. It was pleasing to see that all the questions were attempted by most candidates.

There still seems to be a number of candidates who have not prepared themselves adequately for this paper. Some of the questions that were largely standard bookwork showed that candidates had not learned even basic facts. A substantial number of candidates were unable to express themselves clearly and, as a result, failed to obtain maximum credit. It should be emphasised that candidates should use the correct technical terms in answering questions.

Question 1

Well-prepared candidates found this very straight forward and many obtained full marks. Some candidates, however, were clearly not well prepared. Parts (a), (b) and (c) were generally well done. Part (d) presented more of a challenge. Many candidates were unable to convert the negative exponent into a decimal value in (d)(i). There were also a number of candidates who were unable to recognise that, although the exponent was negative, the mantissa was positive. In part (d)(iii) there were many candidates who failed to recognise that the largest positive value could not start with a 1. Marks were often lost in (d)(ii) due to the candidates being unable to express themselves properly.

Question 2

Full marks were often achieved by candidates who had properly covered the fetch-execute cycle. A major source of error in identifying the components was due to a failure to use the fact that the bit pattern being retrieved from Main Memory was an instruction and should therefore arrive at the CIR.

Question 3

Many marks were lost as a result of careless use of case. The question gave an indication that case was important from the examples given in the stem. The question did seem to be accessible to more candidates than in previous years and there were many answers that gained full marks.

Question 4

This question caused candidates many problems. It was clear that many candidates have had no experience of batch operating systems. While this is understandable in an age where the personal computer is so widely used to the exclusion of mainframe and mini computer systems it is important that candidates are aware of the issues associated with these types of system. Misconceptions, very poor use of language and wild guesswork were common. It is such a pity that terms such as task, job, program, batch, process, operation and command are so widely misunderstood, even more widely misused, and often seen as interchangeable. There was also evidence that candidates had not read the question very carefully.

Question 5

It was pleasing to see that more candidates are now attempting this type of question. More good answers were seen than in the past. The instruction set provided in the question was sometimes ignored and, as result, candidates failed to obtain any marks. Candidates sometimes ignored it completely while others added their own codes to the list provided.

Question 6

This question discovered that most candidates did not really understand the concept of a queue as a data structure. Throughout the question many candidates referred to insert/delete operations thus showing a lack of understanding of the operation of a queue. Part (a) was quite beyond the ability of most candidates and this suggested that they had never attempted to program a queue using a linked data structure. Very few candidates recognised that the value of Front had to be stored in a temporary variable in order to free the memory used. The answers to part (c) suggested that they had not programmed a queue using an array either. Most candidates, however, managed to obtain some marks on this question, most frequently parts (c)(i) and (c)(ii). Many marks were lost in part (c)(iii) due to inadequate descriptions.

Question 7

Very few candidates did not get some marks for the trace and many returned full marks for this part of the question. Some candidates who did achieve full marks on part (a) could not say what the algorithm does. Many candidates seemed to make a wild guess.

Question 8

It is hard to understand why so many candidates were unable to gain good marks for this question since all will be very familiar with GUIs. Many candidates used poor language and were unable to express themselves but there is a greater worry that candidates do not seem to understand how the underlying object-oriented system operates. It was common misconception that an event is something the user does. There were also many candidates who did not seem to understand the event handling mechanism. Once again many marks were lost due to poor explanations in part (b). Part (c) showed that many candidates do not understand object-oriented programming and it appeared that they had not been exposed to this technique.

Mark Ranges and Award of Grades

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