



## **General Certificate in Education**

# **Computing 6510**

## **CPT4      Processing and Programming Techniques**

# **Report on the Examination**

*2007 examination - June series*

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## **General**

The paper proved to be accessible to most candidates and it was pleasing to see that all the questions were attempted by most candidates. 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 a challenge for many candidates.

There still seem to be a number of candidates who have not prepared themselves adequately for this paper. Questions that covered aspects of the syllabus that have not been examined recently proved to be a problem for some candidates. A substantial number of candidates were unable to express themselves clearly and, as a result, failed to obtain maximum credit. It should be re-emphasised that candidates should use the correct technical terms in answering questions. There was also evidence that candidates had rote learnt some standard answers to questions but were unable to show understanding of the topics.

### ***Question 1***

Candidates found this question surprisingly difficult. Parts (a) and (b) were generally done well but there were a significant number of candidates who were not able to convert binary numbers into hexadecimal and/or denary. Part (c) proved to be more challenging. A sizeable number of candidates provided a negative value. Even fewer candidates were unable to obtain the correct bit pattern for part (d). A common error was to fail to normalise the mantissa. Part (e) was standard bookwork but a substantial number of candidates were unable to give two advantages.

### ***Question 2***

Few candidates obtained full marks for this question. In part (a) many marks were lost because the candidates were unable to express themselves. It was clear from part (a) (i) that many candidates knew that device drivers are needed and have clearly loaded device drivers onto a PC, but many do not know what they do. A common error was to suggest that the device driver communicates directly with the processor. More candidates were able to suggest a suitable language but fewer were able to provide good reasons for their choice. Most candidates understood that the mouse generates an interrupt but very few were able to describe the way that an interrupt service routine operates. Many answers concentrated on the mechanism to call the interrupt service routine.

### ***Question 3***

A majority of candidates were able to describe the function of the Arithmetic Logic Unit and most of those were able to name at least two registers in part (c). Fewer candidates were able to describe the function of the control unit.

### ***Question 4***

This question caused candidates many problems. It was clear that many candidates have had no experience of the basic features of a disk drive. Disk addresses were very rarely described satisfactorily, many candidates describing main memory addressing. It was very disappointing to read the answers to part (b). It was clear that very few candidates understand the operation of a buffer.

**Question 5**

Candidates often scored well in parts (a) and (b). The most common mistake was to fail to use the correct case. Very few candidates were able to give a good answer to part (c). Candidates were generally unable to solve the problem.

**Question 6**

It was very pleasing to see that most candidates attempted this question and there were quite a few completely correct solutions. There were a number of candidates who ignored the assembly code instructions provided and used their own instructions. The biggest difficulty was in turning the bit on/off without affecting the rest of the memory location.

**Question 7**

Very few candidates scored well on this question. Aggregation was a mystery to most candidates. Many answers described inheritance and then went on to give class definitions using inheritance. Hardly any candidates were able to draw a class diagram using the correct symbols. It was disappointing to see the number of answers that suggested that the candidates had not had experience of object oriented programming. The concepts of private and public were often misused and incorrect data types were often suggested.

**Question 8**

Candidates generally scored well on this question. Recursively-defined was well understood although many candidates were unable to describe the use of the stack well enough. It was pleasing to see the majority of candidates obtaining most of the marks on part (c). Candidates often failed to obtain the mark for part (d) due to inadequate descriptions. Although many candidates provided a situation where the algorithm will fail, fewer were able to suggest a suitable modification. Once again this was often due to an inability to express themselves well. A wide range of answers were supplied for part (g) but a substantial number of correct responses were given.

**Mark Ranges and Award of Grades**

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.