AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate in Education

Computing 2510

COMP2   Computer Components, the Stored Program Concept and the Internet

Report on the Examination

2009 examination - January series

General

This was the first time this unit has been examined and it was very pleasing to see how many candidates were well prepared for the new topics in the specification. However, candidates continue to find it difficult to explain the meaning of technical terms, whether they are terms that have been in previous specifications, such as hardware and software, or whether they were new terms such as robot.

Question 1

A significant number of candidates described hardware in such a way as to make it appear that only peripheral devices were classified as hardware. Hardware is all the physical components (electronic circuits) of the computer. Although this time marks were awarded for explaining the term by example, this is unlikely to be the case in future examinations.

Software are the programs which run on the hardware. Candidates who stated that software is a series of instructions missed the mark available as this is not a precise enough explanation. Only a **sequence** of instructions can be classed as a program. Some candidates mistakenly think that data are software.

Question 2

Most candidates correctly categorised the software given in the table. However, a minority of candidates failed to understand the instructions of writing the category letter given in the question into the table.

Question 3

This question clearly showed which candidates had studied this topic. Answers mostly either gained full marks or hardly any. Candidates are not expected to be able to write lengthy low level code. They are expected to understand how a fairly simple assignment statement in a high level language would be represented in assembly code. Most candidates knew that an assembler is required to translate assembly code statements into machine code, but rather fewer candidates knew that only a compiler translates a high level language statement into machine code. An interpreter will not produce machine code; it merely interprets and executes high level language statements.

Question 4

A large majority of candidates answered this question very well. Some candidates put themselves at a disadvantage by not drawing a screen outline (a box) to help with the layout. Without this outline it was impossible to show the contents of the title bar. Many candidates seemed to be under the impression that the title appeared in the main browser window, rather than in the bar at the very top of the browser window. The heading was often not obviously larger than the rest of the text. Candidates who labelled the heading with something like, "should be larger text," were given credit. Few candidates knew that the <ol> tag would automatically number the list items. The hyperlink statement was often misunderstood. The name of the linked page is not displayed, the text to be underlined to show it is a hyperlink was "More information". A few candidates seemed not to know that the <!> tag encloses a comment which would not be displayed in the browser window.

Part (b) of the question was answered well by those who understood embedded style sheets. Although punctuation was ignored when marking this response, candidates should be made aware that < > are not the correct symbols to enclose style rules. In future candidates may be requested to write syntactically correct rules. Although the HTML source had a big gap where the style rule should go, many candidates missed the target and put the X somewhere completely different.

This is clearly a topic where candidates can learn in a practical way as only a text editor and a browser are required to write HTML and see the effect when viewed through a browser.

Question 5

This was a very poorly answered question, even though the Fetch-Execute cycle was given and candidates did not need to recall the exact sequence, only interpret the register-transfer language statements. Few candidates seemed to have any appreciation that a register is merely a memory location; it can't do anything except hold a binary value. Many candidates wrongly attributed the Current Instruction Register with the ability to decode and execute the instruction and the Program Counter with the ability to add 1 to itself. Some candidates were not at all sure what was stored in the Program Counter. Although the synonyms were given in the register-transfer language statements, candidates were expected to use the full names of the registers. Some candidates made up various fictitious names. Answers only using the abbreviated register names were credited this time, but in the future candidates may be required to give the full names.

Question 6

Although not a new topic, candidates continue to have difficulty understanding what the different parts of a Uniform Resource Locator represent. http:// tells the browser which protocol to use; www.aqa.org.uk is the address of AQA's World Wide Web server; /qual/gce/computing_new.php is the file path of the resource.

Question 7

Very few candidates found it difficult to organise their answer to this question and the quality of language used was generally high. Candidates often had no clear understanding of the difference between the World Wide Web, the Internet and an intranet; some even confusing the Internet with the World Wide Web. A significant number of candidates clearly had studied the relevant chapter in the text book very carefully, gaining full marks on quoting almost verbatim the definitions of the three terms.

Question 8

Some candidates failed to achieve marks because they took no notice of the media listed in the question and suggested others or used variations of terms. It is not acceptable to use the term 'hard drive' when the question provided the term 'magnetic hard disk'; nor is it acceptable to substitute 'CD-R' for 'CD-ROM'.

Question 9

Very few candidates appreciated that the term 'personal data' refers to data which relate to a **living** individual who can be **identified** from that data. It is not sufficient to suggest that name, address and date of birth are personal data. Some candidates wrongly suggested that someone's personal collection of music represented personal data.

The specification requires candidates, 'to consider current legal controls which specifically refer to computerised data and programs, and the implications of current legislation.' This does not mean that candidates merely need to recite part of Acts such as the Data Protection Act. The question required candidates to suggest measures that would contribute to comply with the Act. Examples that gained credit were making regular backups and ensuring that the data can be restored from backups; enforcing regular changes of strong passwords protecting databases that store personal data.

Question 10

Most candidates had no difficulty completing the truth tables. It was pleasing to see that a large number of candidates correctly expressed the given scenario as a Boolean equation. A few candidates mixed up the symbols for AND and OR. Many candidates correctly completed the logic gate diagram, even if they did not write down the correct Boolean expression. Each gate that had been given the correct inputs was awarded a mark. Some candidates drew very neat diagrams and helped themselves by writing the equation on the output of each gate. A few candidates missed out on marks because they had not connected the gates to each other.

Question 11

Candidates found this question difficult. Many seemed to be under the misconception that barcodes or magnetic stripes are incorporated into RFID systems. Considering that this method of identifying items is so frequently used nowadays it is sad to see that so few candidates were aware of the technical aspects and had no idea of the principles of operation of RFID tags. Most candidates concentrated on the fact that it would trigger an alarm bell; this fact, however, did not gain credit. The reader near the exit sends a radio frequency wave which the antenna of the RFID tag in the book receives when it comes within range. This energises the tag and then the transponder in the tag sends a data signal that the reader receives. Candidates should be aware that the tag in the book does not continually send out a signal.

Question 12

Even candidates who illustrated their answer with a suitable application such as car manufacture or bomb disposal found it exceedingly difficult to describe what is meant by a robot. The description needs to distinguish the system from a standard desktop computer running sophisticated software. A robot is a mechanical structure that can make dextrous movements, is programmable and has some degree of intelligence to sense and react to its environment. Robots are used because they can perform repetitive tasks that require precision and produce consistent quality, even during continuous operation.

Mark Ranges and Award of Grades

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