



GCSE

Computer Science

8525/2 Computing concepts

Report on the Examination

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General

It appears that some advice given in previous reports has been heeded. A few students gave more than one answer as alternatives where only one answer was required, but this number was noticeably lower than in previous series.

Most students showed their working where it was asked for. A significant minority, however, were unable to gain working marks where they had an incorrect response because they had not shown their working.

The words ‘data’ and ‘information’ were often incorrectly used interchangeably. This led to many students not being awarded some marks because the terms are not interchangeable.

Several questions asked for a definition. It was clear from the responses that many students had not learned definitions, even where these are given in the specification.

Students should read questions carefully. There were several questions in this paper where a significant number of students gave answers to questions similar to the ones that were asked, but did not answer the one actually asked.

Questions 1 to 4.3

These questions were answered correctly by a high percentage of students. Question 2.2 was the least well answered though most students who did not give the correct answer successfully gained a working mark.

Question 5

Just under half of students gave an incorrect answer to question 5.2, the most common wrong answer being 2.

The relationship between colour depth and file size did not appear to be understood well and many students stated that because more colours were being used the file size would increase for both images.

Question 6

About half of students did not gain full marks on this question but most of these did gain a working mark.

Question 7

Question 7.3 was fairly well answered, though some students did use words rather than the symbols required by the question. In these instances, no marks could be awarded. A small number of students used different symbols from those shown in the specification. Where these were the equivalent of the symbols expected, marks were awarded. However, it would be advisable to teach students the terminology given in the specification.

Question 8

Some excellent answers were seen, with some students clearly having knowledge way beyond that expected for GCSE. Common incorrect answers for the function of the clock were that it measured how long instructions took to execute or that it showed the time on screen. Some students, while correctly stating that the clock sent out an electronic signal, omitted to say that the signal was sent at regular intervals. The cache was often wrongly stated as holding information rather than correctly stating that it held data or instructions. A surprising number of students gave answers concerning a disk cache rather than a CPU cache.

Question 9

Most students were able to correctly interpret the binary sequence of bits for 9.1. Some students gave the answer in lower case characters which was not creditworthy. For the calculation many students incorrectly thought that ASCII is an 8-bit code. They need to know that ASCII is a 7-bit code, as Extended ASCII is not required for this specification.

Question 10

This question was generally well answered, though a considerable number of students thought that machine code is translated using a compiler.

Question 11

This question was not well answered. Some students were able to give descriptions that were well beyond the level expected but most did not achieve more than one mark. A very common incorrect answer was that 'low level languages do not need to be translated'. Whilst this is true for machine code, it is not true for assembly language.

Many students seem to think that low level language is the same as machine code when, in fact, machine code is only one example of a low-level language. It would be beneficial if students knew the difference between low level languages in general and machine code in particular. Students should also know that only machine code can be executed directly.

Question 12

This question was also not well answered, with over a third of students not gaining any marks. Stronger answers showed knowledge about how computer language translators work and gave excellent answers about the compilation and interpretation process. Other answers appeared to have many misunderstandings about compilers and interpreters. One common answer was that compilers and interpreters translated machine code into language that humans could understand. A good number of students did not answer the question asked, instead comparing the advantages and disadvantages of compilers and interpreters.

Question 13

These two questions were well answered, though a significant number of students gave answers that compared network topologies or types of network rather than answering the question asked. Better students considered costs involved in setting up and maintaining the network as well as the possibilities of collaborative working and use of the network for research and sharing resources.

Question 14

Just under half of students provided correct answers to both parts of the question.

Question 15

Many responses to this question on encryption were vague. Commonly it was stated that encrypted data could not be stolen or accessed or intercepted, which is not accurate. The point that should have been made is that it can't be understood by someone who does not have the key to decrypt the data, which is a different thing.

Question 16

Most students were able to describe both blagging and phishing as attempting to persuade a person to divulge sensitive information by making up a convincing story but fewer clearly described other characteristics of the two types of social engineering.

Question 17

Often students focused on what these forms of malware are or do, rather than answering the question, which was how they work. Some students inserted their own examples of malware, such as worms, adware or ransomware. These responses gained no marks.

Question 18

Many students did not know the definition of a database, nor the definition of a foreign key. Many confused data inconsistency with data redundancy or stated that data inconsistency was using the wrong data type or format for the data. Quite commonly information was used instead of data in responses. Other examples of incorrect terminology were the use of tables instead of database and variable instead of field.

Most students could state an identifier from the Actor table and create a correct SELECT statement but less than a quarter were able to construct an UPDATE query correctly, or correctly construct a statement to insert a record. Often the values given in the INSERT clause were not of the correct data types.

Question 19

Many students were unable to give a definition of cyber security, although the definition is given in the specification. Most students were able to give a good explanation of CAPTCHA but most confused email confirmations, which occur when an account is registered, with 2 Factor Authentication, which occurs every time an already existing account is accessed.

Mark Ranges and Award of Grades

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