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# Level 3 Technical Level

**IT: CYBER SECURITY**

**IT: NETWORKING**

**IT: PROGRAMMING**

**IT: USER SUPPORT**

Unit 1 Fundamental principles of computing

H/507/6424

Report on the Examination

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TVQ01009, TVQ01010, TVQ01011, TVQ01012, TVQ01013, TVQ01014, TVQ01015  
June 2018

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Version: 1.0

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**General**

It was notable that some student responses abruptly ended where the question space finished. These responses tended not to appear complete. Students should be reminded that there are additional answer spaces at the back of the student booklet where responses can be continued, if necessary.

**Questions 1 to 5**

These were generally well answered, though question 5 had a high number of incorrect responses.

**Question 6**

This question was about solid-state drives.

Most students were able to gain one mark for this question by stating that SSDs contain no moving parts, but many did not also state that this meant there was no friction, or that the low voltages used generated little heat. A surprisingly large number of students appeared to think that SSDs had an inbuilt fan.

**Question 7**

This question was about data and information.

A high percentage of students were unable to provide clear examples of information. Often this was because they did not give a context for the data being shown. For example, students stated '31 students' or '210 feet'.

More students were able to explain how information is different from data, by giving definitions of the two terms, and the most able students gave correct examples of the two.

More than half of students gained both marks for explaining why the graph might be misleading, with a large variety of answers that pointed to lack of clarity on the graph and the possible consequences.

**Question 8**

This question was about programming languages.

The majority of students were able to provide answers to this question, with most stating that computers work with binary. Better students recognised that the complexity of interpreting nuanced languages was a key factor, or explained the difficulty of translating the languages into binary.

**Question 9**

This question was about programming languages.

Whilst most students did attempt this question, very few knew that PROLOG is a declarative programming language used for intelligent knowledge-based systems or artificial intelligence.

**Question 10**

This question was about multi-user computer systems.

Somewhat surprisingly, over a third of students gained no marks on the first part of the question. Often this was because they talked about ethernet, or similar, networked systems rather than time-sharing or multi-tasking or processor-sharing systems.

The second part of the question was generally well answered, with weaker students writing about general security software and stronger students explaining how the software could be applied to a multi-user system, and how this increased security.

**Question 11**

This question was about qualitative and quantitative data.

This question was generally well answered, with over three-quarters of students gaining full marks on the first two parts and nearly half gaining three or more marks on the third part.

The commonest reason for not gaining marks was in getting quantitative and qualitative data the wrong way around.

**Question 12**

This question was about the fetch-execute cycle.

It was disappointing that nearly a third of students did not attempt this question, particularly as similar questions have been asked in previous papers. However, of those who did attempt it nearly a third gained 7 or more marks.

A wide variety of responses was seen, from very detailed, technical descriptions to analogies that depicted the steps in the sequence. Where students did not give technically correct descriptions, marks were awarded if their descriptions showed that they understood the steps being carried out and their sequence. Better students were able to describe where data was fetched from, where it was stored and which parts of the CPU carried out the processing.

A common misconception was that information is being processed in the cycle, rather than data.

**Question 13**

This question was about client devices.

Few students could give a correct response to either part of this question.

**Question 14**

The first, second and fourth parts of this question were answered well, though the third and fifth parts not so well.

In the first part, many students gave responses that included general descriptions of the hardware required, but the stronger students gave some technical detail and justified their choices against

the potential uses given in the stem of the question. Often students described suitable hardware rather than discussed it. Some students appeared to misread the question and gave answers that concentrated on a fast and reliable internet connection or described suitable software.

The second part of the question gave students flexibility to suggest many types of software. A wide variety of pieces of software was suggested, most being appropriate and given with good reasons. Unfortunately, some chose to specify three very similar pieces of software, such as anti-virus, anti-malware and anti-spyware software. In these cases, the software suggested was too similar to attract maximum marks.

Many students responded to the fifth part of the question with answers that referred solely to software that gives users the ability to locate and store files, such as File Explorer or similar. This was not what the question asked for and could not be awarded any credit. Some students gave very good descriptions of systems such as NTFS or FAT32.

### **Mark Ranges and Award of Grades**

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

### **Converting Marks into UMS marks**

Convert raw marks into Uniform Mark Scale (UMS) marks by using the link below.  
[UMS conversion calculator](#)