



**General Certificate of Secondary Education  
June 2011**

**ICT**

**45201**

**(Specification 4520)**

**Unit 1: Systems and Applications in ICT**

***Report on the Examination***

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## ***Information and Communication Technology (Full Course)***

### ***Unit 1 - 45201***

The Full Course paper was marked on-line this year and this has now become a well-established process. As questions are marked on-line, it is easy to collect a range of statistics on each part of each question as well as those relating to the whole paper. These statistics allow AQA and examiners to see which questions were answered well and which questions candidates found difficult.

In addition, candidates at a small number of centres sat this examination online, using an electronic version of the paper.

#### **Max mark 120**

#### **General Comments**

Units from the new specification can be taken early and ‘banked’ for certification in the summer of 2012.

Overall, the standard of performance from the candidates in the written paper was good. It is however, worth emphasising that in this specification, there are elements of theory that are difficult to teach through practical lessons and controlled assessment tasks alone. These are often best taught by separate theory lessons or as starters or plenaries in practical lessons.

Unlike previous AQA GCSE ICT specifications, this paper was untiered. The statistics do indicate that most of the paper appeared accessible to the majority of candidates (this year, nearly all candidates scored 40 marks or more). In addition, few candidates left questions not attempted, which is a pleasing start to Unit 1 of this new specification. This question paper for this specification is in three sections and all questions in sections A and B are compulsory. The sections are described in the specification as follows;

Section A – 10 structured questions featuring a range of types of questions from very short to questions requiring 2 or 3 line answers.

#### **Total 72 marks**

Section B – 3 structured questions featuring short and extended answer questions.

#### **Total 36 marks**

Section C – 1 essay question from a choice of 2.

#### **Total 12 marks**

## **Section A**

### **Question 1**

In question 1(a)(i), 1(a)(ii) and 1(a)(iii), candidates were asked to identify the output device shown in a series of pictures. As expected, all parts of the question were very well answered and around 98% of the candidates were able to identify each of the output devices shown.

In question 1(b), the majority of candidates were able to identify that CD-ROM was not an input device.

In question 1(c) candidates were asked to give examples of where microprocessors are likely to be found in the kitchen (other than in computers). This part of the first question was also very well answered and nearly all of the candidates were able to give at least one suitable example.

In question 1(d)(i), the majority of candidates were able to identify two mobile devices from the list given.

In question 1(d)(ii), although most candidates gained 1 mark for this part of the question, only around a small proportion gained both marks. The most common correct explanations involved the ideas of portability and providing access from 'anywhere'.

### **Question 2**

In question 2(a) around two thirds of candidates were able to identify that 16 Gigabytes (Gb) was the most likely storage capacity of a modern smart mobile phone.

In question 2(b), just under half of candidates scored any marks by explaining why both RAM and ROM were needed in the smart phone shown. Many candidates simply stated that RAM stood for Random Access Memory and ROM stood for Read Only Memory.

### **Question 3**

This question focused on common elements of a Graphical User Interface (GUI). In the multiple choice parts of this question 3(a)(i), 3(a)(ii) and 3(a)(iii), candidates were asked to name the objects shown from a given list. As expected, all parts of the question were very well answered and the vast majority of the candidates were able to identify each of the output devices shown.

In part 3(b), around three quarters of candidates could identify the two icons shown. Common incorrect answers were, for 3(b)(i) a multiplication sign used in arithmetic and for 3(b)(ii) a minus sign or a dash put in between words.

#### **Question 4**

Part 4(a) of this MCQ question dealt with some legal and moral issues to be taken into consideration when using ICT.

In part 4(a)(i) most of the candidates recognised, from the list, this concern as 'hacking'.

In part 4(a)(ii) many of the candidates recognised, from the list, this concern as 'plagiarism'.

In part 4(a)(iii) around two thirds of candidates recognised, from the list, this concern as 'phishing'.

Parts 4(b) and 4(c) asked candidates about health related issues related to spending a long time each day working with computers.

Although in part 4(b) a pleasing majority of candidates could give one step to reduce the risk of back problems, just under half gained both marks for giving two different steps. Often candidates for their second answer would simply rephrase their first answer, which gained no extra credit.

Part 4(c) was also well answered by almost all of the candidates, with nearly all gaining at least one mark for giving one other health problem and the majority of candidates being awarded both marks. As with part 4(b), a candidates second answer was often a close repeat of their first answer or repeated 'back issues' from 4(b).

#### **Question 5**

Part 5(a) of this MCQ question dealt with a range of sources that could be used to find information.

In part 5(a)(i) nearly all candidates recognised, from the list, this source as 'Sat Nav'.

In part 5(a)(ii) around three quarters of candidates recognised, from the list, this source as 'DVD-ROM'.

In part 5(a)(iii) the majority of candidates recognised, from the list, this source as 'Blog'.

Over two thirds of candidates were able to gain at least one mark for their description of a podcast in part 5(b). Most of these candidates wrote about media files such as audio or video. Only a third of candidates went on to score a second mark by expanding their description to include downloading (web syndication) these files or the idea of episodically release (daily/ weekly/ monthly).

Parts 5(c)(i) and 5(c)(ii) were about the error message 'storage full' and the possible steps to be taken if this message occurs. The majority of candidates gained the mark for saying what was meant by the message 'storage full' and a similar number gained at least one mark for explaining what steps can be taken to download the information if the error occurs. However, only around a third of candidates gain both marks for this part of the question.

## Question 6

Part 6(a) of this MCQ question dealt with features of a graphics package and Part 6(b) of this MCQ question dealt with features of audio software. All parts were extremely well answered with nearly all candidates gaining full marks on each part of the question.

Part 6(c) was also well answered with the majority of candidates choosing the best description from the list, which was 'Sends messages between computers via the Internet'. The most common incorrect answer was 'Electronic Mail', which simply states what it stands for rather than what it does.

Part 6(d) of this question dealt with describing briefly the purpose of three e-mail related terms.

In part 6(d)(i) the vast majority of candidates could describe the purpose of Mailbox/Inbox.

In part 6(d)(ii) less than half of candidates could describe the purpose of Cc. Candidates often just wrote 'carbon copy' without describing the purpose.

In part 6(d)(iii) the majority of candidates could describe the purpose of Attachments and good examples were often given.

## Question 7

This question asked candidates about video conferencing and collaborative working. In part 7(a), almost every candidate could identify from the table, at least one of the elements needed for video conferencing and the majority could identify two.

7(b)(i) The most common correct answers for advantages of using video conferencing rather than email were, the idea of the students working in real time and it was more personal taking face to face. The majority of candidates scored at least one mark for this part of the question.

7(b)(ii) Over half of the candidates could identify a suitable disadvantage of video conferencing. The most common answers that gained marks were;

- The cost of extra hardware such as ..... (not just more expensive)
- 'Time difference' issues between the UK and the USA
- 'Poor quality' pictures/sound could hinder communication between the students

7(c)(i) The vast majority of students had clearly worked collaboratively and were able to gain one mark for describing the process of 'two or more parties working together'. But less than a quarter of candidates were able to expand on their answers to include ideas such as 'working to common targets/goals' or it being a 'recursive process'.

Similarly in 7(c)(ii), over three quarters of candidates could give at least one advantage of collaborative working but only around a fifth of candidates could give two advantages.

## **Question 8**

The majority of candidates found all parts of question 8 difficult and the ideas of data validation and data verification did not seem to be well understood by many candidates. The statistics would indicate that this question was the least well answered question in Section A. Part 8(a) of this MCQ question dealt with data validation.

In part 8(a)(i) under a quarter of candidates recognised, from the list, that ‘Presence Check’ would be the best method of data validation.

In part 8(a)(ii) around half of candidates recognised, from the list that ‘Look-up list’ would be the best method of data validation.

In part 8(a)(iii) half of candidates recognised, from the list that ‘Range Check’ would be the best method of data validation.

In part 8(b)(i) just over a quarter of candidates could name one method of data verification, and significantly less could name two methods. Many candidates resorted to naming methods of data validation given in part 8(a). The most commonly seen correct answers were the two indicative examples in the subject specification i.e. visual checks and double entry.

Question 8(b)(ii) asked the candidates to describe how one of the methods named helps to reduce mistakes when data is entered into the database. As it was a follow on from 8(b)(i), it is not surprising that it too was not answered correctly by many of the candidates and less than a quarter of candidates gained any marks for this part of the question.

Although overall the candidates responses were disappointing, it was clear some centres had taught this section of the syllabus well and there were some good answers.

## **Question 9**

Part 9(a) of this logo style question was well answered by most candidates and around three quarters of candidates were able to gain full marks by writing a set of instructions to polish the grey shaded area.

In part 9(b) full marks were far less common but three quarters of candidates scored at least one mark for this section.

Candidates found part 9(c) more difficult with a little under half of the candidates scoring at least one mark. The mark scheme for this section allowed for several correct (or partially correct) solutions and allowed for a number of different starting places and starting directions.

## Question 10

This question looked briefly at operating systems and preventing unauthorised access to computer systems.

In part 10(a)(i) it was quite pleasing to see that over half of candidates could identify from the table the task carried out by an operating system. A similar percentage could identify from the table, which one was not a common operating system.

10(b)(i) asked candidates what is meant by the term password and the majority of candidates gave a suitable answer. However in 10(b)(ii), although the vast majority of candidates gained at least one mark, only half of candidates gained both marks. Candidates often repeated very similar points for both feature 1 and feature 2.

10(c) asked candidates to describe one other (not just to repeat password) authentication method and over half of the candidates were able to gain at least one mark for this part of the question. Candidates who only scored one mark (less than half), tended to state a method, whilst the candidates who scored both marks, then went on to explain how this prevented unauthorised access.

## Section B

### Question 11

In question 11 candidates were asked a range of questions about a spreadsheet used to plan a budget for a school production. 11(a) was well answered and the majority of the candidates realised the best way to display all of the title 'Grease' was to make row 2 higher. Around two thirds of candidates could name a cell, which was formatted as number in part 11(b), and identify the formula used in cell D24 in part 11(c).

Parts 11(d)(i) and 11(d)(iii) were well answered and the vast majority could identify the type of graph produced and a high number of candidates could identify a more suitable type of graph or chart. In part 11(d)(ii) although just under two thirds of candidates gained at least one mark for this part of the question, many candidates simply 'stated' a reason without going on to explain why the finance office might not find the graph very useful.

11(e) was the first of the extended answer questions which were all marked using a 'levels of response' rather than a 'points' mark scheme. The concept of modelling was not very well understood by most candidates and it would appear many candidates had not yet tackled the modelling elements of Unit 2 or Unit 3. Although over half of the candidates gained at least one mark, very few were able to give a suitable explanation of the process and gain marks at the higher mark ranges (4 or 5 marks).



## Question 12

In question 12 candidates were asked a range of questions about a family planning a holiday. The results of search for holidays leaving Manchester on the 2<sup>nd</sup> or 3<sup>rd</sup> July were given in a database table.

In part 12(a)(i) less than half of the candidates could say what was meant by a field. Many answers given were too vague. In questions like these, it is often helpful for candidates to give examples. Almost three quarters of candidates could give the correct number of fields for part 12 (a)(ii). Incorrect answers were 13 (the number of records) and occasionally 104 (13 records \* 8 fields).

In parts 12(a)(iii) and 12(a)(iv) over three quarters of candidates could identify the 'Booking code' as the key field and over a third could state why a key field is needed.

Just under half of the candidates scored two marks for describing that the table had been sorted alphabetically on the 'Country' field. Few candidates then went to describe that within each country the data was sorted alphabetically on the 'Resort' field. Most incorrect answers described the data as being sorted on the 'Booking code' field.

Overall question 12(c) was quite well answered with a little under a half of candidates scoring 2 or 3 marks. A wide range of suitable issues relating to 'the importance of checking sources' were discussed by candidates, including possible consequences for not checking sources. Candidates who scored only one mark on this section tended to give one issue and usually did not consider any consequences.

## Question 13

In question 13 candidates were asked a range of questions about ordering groceries online.

Although 13 (a) was well answered by many candidates, with the majority of candidates gaining at least one mark for giving one advantage to a customer for ordering groceries online. However, only around a third gained both marks. Common incorrect answers included 'faster', 'cheaper' without any added explanation.

Questions 13 (b)(i), (ii) and (iii) were not well answered and the use of cookies by supermarkets was not well understood by many candidates.

Candidates found 13(c) the easiest of the extended answer questions in Section B. Over two thirds of candidates scored two or three marks on this question and the vast majority of candidates scored at least one mark. Candidates who scored in the highest mark ranges (4 and 5 marks), **discussed**, giving examples of the possible disadvantages and risks of shopping online.

## Section C

Both essay questions were tackled reasonably well by candidates and almost half (both Qu14 and Qu15) of all the candidates were able to score half marks (6 marks) or more. A very small number of candidates made no attempt to answer either essay question.

Overall candidates appear to have performed slightly better on question 15 than on question 14. As with all of the extended answer questions, the essays were all marked using a 'levels of response' rather than a 'points' mark scheme.

### Question 14

Just over one third of candidates attempted this essay question and as stated earlier, overall it was reasonably well answered. A wide range of sensible issues were raised by candidates including;

- Financial/Economic issues
- Educational issues
- Political issues
- Isolation issues
- Religious issues
- Communication issues
- Health issues

The levels of response mark scheme was applied in a similar way to question 15, details of which are given below.

### Question 15

This question was the more popular of the two essay questions and just less than two thirds of candidates attempted this question.

The overall detail of how these essay questions were marked is given in the mark scheme published by AQA. However, extracts from the mark scheme with some amplification are given below.

From the mark scheme, candidates whose responses were at the **lower mark range (1-3 marks)**, displayed the following;

#### Subject Criterion Context

There are simple/very simple statements about at least one valid **statement** on companies increased use of ICT and network technology. These were often brief bullet points.

Examples were supported by very limited descriptions or no descriptions at all. Possible effects on companies were NOT really considered by these candidates.

### Quality of Written Communication

The candidate has used a form and style of writing which has **many** deficiencies. Ideas were not **often** clearly expressed. Sentences and paragraphs were **often** not well-connected or **at times** bullet points were used.

Specialist vocabulary tended to be used **inappropriately** or **not at all**. **Much** of the text is **legible** and at times only **some** of the meaning is **clear**. There are **many** errors of spelling, punctuation and grammar but it should still be possible to understand **much** of the response.

Whilst from the mark scheme, candidates whose responses were at the **higher mark range (7-9 marks)**, displayed the following;

### Subject Criterion Context

There is evidence of a more **developed understanding** shown through the use of **suitable** examples that **describe** more than two valid **effects** on companies increased use of ICT and network technology. Examples are supported by suitable descriptions. Possible effects on companies are clearly described.

### Quality of Written Communication

The candidate has **mostly** used a form and style of writing **appropriate** to purpose and has expressed some complex ideas **reasonably clearly** and **fluently**. The candidate has usually used **well linked** sentences and paragraphs.

Specialist vocabulary has been used on a number of occasions but **not always appropriately**. Text is **legible** and **most** of the meaning is **clear**. There are **occasional** errors of spelling, punctuation and grammar.

Again a wide range of sensible issues were raised by candidates including;

- **Increased flexibility**, flexible hours, home working etc.
- **Size of workforce**, jobs loss because of introduction of ICT (unemployment), new jobs being created, mainly in ICT, etc.
- **Location of workplace**, centralised, out of town, home working, mobile computing, etc.
- **Change in jobs**, as with size of workforce but also training and retraining issues. Plus job satisfaction, ease of tasks etc.
- **Video conferencing** issues
- **Web site** issues
- **Wireless/Wi-/Fi/network access** issues

### Mark Ranges and Award of Grades:

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

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