



*Rewarding Learning*

**General Certificate of Secondary Education**

**2016**

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**Information and Communication Technology  
(Short Course)**

Unit 2: Understanding ICT Systems in Everyday Use  
and its Implications for Individuals, Organisations, Society  
and the Wider World

**[GIT41]**

**WEDNESDAY 18 MAY, MORNING**

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**MARK  
SCHEME**

## **General Marking Instructions**

### ***Introduction***

Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses. The mark schemes should be read in conjunction with these general marking instructions.

### ***Assessment Objectives***

Below are the assessment objectives for GCSE ICT.

Candidates must:

- recall, select and communicate their knowledge and understanding of ICT;
- apply knowledge, understanding and skills to produce ICT-based solutions; and
- analyse, evaluate, make reasoned judgements and present conclusions.

### ***Quality of candidates' responses***

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

### ***Flexibility in marking***

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

### ***Positive marking***

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

### ***Awarding zero marks***

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

### ***Types of mark schemes***

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

### ***Levels of response***

Tasks and questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another.

In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

- **Threshold performance:** Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.
- **Intermediate performance:** Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.
- **High performance:** Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

### **Marking calculations**

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

### **Quality of written communication**

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is limited.

Level 2: Quality of written communication is satisfactory.

Level 3: Quality of written communication is of a good standard.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

**Level 1 (Limited):** The candidate makes only a limited attempt and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

**Level 2 (Satisfactory):** The candidate makes a reasonable attempt and use of an appropriate form and style of writing, supported with appropriate use of diagrams as required. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning evident.

**Level 3 (Good):** The candidate successfully selects and uses an appropriate form and style of writing, supported with effective use of diagrams where appropriate. Relevant material is organised with a good degree of clarity and coherence. There is good use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a sufficiently high standard to make meaning clear.

- 1 (a) C Data is facts and figures that have no meaning [1]
- (b) C Optical Mark Recognition [1]
- (c) D OCR stands for Optical Character Recognition which is used to scan typed or handwritten documents [1]
- (d) A Software which is designed to damage files on the computer [1]
- (e) B jpg, mpg, mp3, zip [1]
- (f) D Flash media allows for high speed data transfer and can be read from and written to [1]
- (g) A RAM is Random Access Memory, is volatile and holds programs currently being run on the computer [1]
- (h) D Byte, Kilobyte, Megabyte, Gigabyte [1]
- (i) D A check digit, the manufacturer's code and the item code [1]
- (j) B Teleworking increases the area from which a company can recruit [1]

- 2 (a) Merged/centred [1]
- (b) She can predict/estimate the approximate cost of her party [1]

(c)

Cell	Formula	
D5	B5-C5	[1]
C15	Sum(C5:C14)	[1]
B18	B2-C15	[1]

- (d) (i) Whether **each item** has gone over budget. [1]
- (ii) Complete the IF statement which provides the information in cell E14.  
 =IF(D14[1] < 0[1], "Yes", "No")  
**Or**  
 =IF(B14[1]<C14[1], "Yes", "No") [2]

(e) (i)

Cell range 1	A4/A5: A14	[1]
Cell range 2	D4/D5: D14	[1]

- (ii) Shows whether each item was above/below/on budget [1] and by how much [1].  
 Description of deviation between actual cost and estimated cost [1] and reference to each item [1] [2]

AVAILABLE MARKS

10

12

3 (a) Universal Serial Bus [1]

(b) HDMI [1] – to watch TV/VIDEO [1]  
Ethernet/or Network [1] – to access network resources, e.g. files/printers [1]  
Speaker/or Headphone [1] – to listen to sound [1]  
or Microphone [1] – to record sound [1] [2]

(c)

Statement	TRUE/FALSE
This device can be used to read Blu-ray discs	FALSE
This device can be used to read CD-ROM discs	TRUE
This device can be used to write information onto DVD-RW devices	TRUE
This device can be used to write information onto Blu-ray discs	FALSE

[4]

(d) Text/picture format/PDF/rtf/doc [1]

(e) (i) Mouse Graphics Digitiser Tracker Ball [1]

Reason : can hold like a pen/stylus so easy to draw [1] [2]

(ii) Plotter Monitor Scanner [1]

Reason: any **one** from:  
high quality printing/doesn't limit page size [1] [2]

12

4 (a) To send an email **already in** Jim's inbox or/sent items [1]

(b) Any **one** from:  
Don't have to select every person one by one/don't have to type in every address each time [1]  
Less likely to omit an email address [1]/  
Less likely to insert the address of a non-member [1]  
So email is directed to correct recipient/only members will receive information [1]  
More efficient as list already set up [1] [2]

(c) jimmysgames@email.com [1]/the address contained in the Bcc line.' [1]  
(Not accept Bcc on its own)

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AVAILABLE  
MARKS

- 5 (a) Bandwidth not big enough [1]  
to carry sound and video signal [1]  
Heavy network traffic [1] [2]
- (b) Any **two** with expansion:  
Can see face to face  
Can interact in regular conversation  
Can meet with family without having to pay travel costs  
Conversations can be arranged ad hoc  
Mobile devices can be used [4]

6 (a)

Statement	Tick (✓)
Students can get immediate feedback from tasks completed using specially designed software	✓
Students need to have a high level of ICT skills if they wish to make use of an interactive whiteboard in the classroom	
Parts of a lesson or instructions can be recorded, saved and played back at a later stage	✓
An interactive whiteboard can only be activated when the student uses a finger to interact	
Handwriting can be converted into text and printed out as notes at the end of a lesson	✓

[3]

- (b) **Level 0 ([0])**  
Answer not worthy of credit

**Level 1 ([1]–[2])**

The candidate mentions one [1] or two [2] reasons why schools may filter Internet. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited. There is little use of specialist terms.

**Level 2 ([3]–[4])**

The candidate discusses one or two reasons why schools may filter Internet. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory. There is some use of specialist terms.

Answers may include:

- Blocking of certain types of content/unsuitable websites/inappropriate material
- Use of software to monitor Internet usage/firewall
- Use key words
- Blocking shopping, gaming, social networking sites
- Removes opportunity for distraction in the classroom
- Protect students from Internet trolls
- Help maintain safe working environment for students in the classroom [4]

AVAILABLE  
MARKS

6

7

		AVAILABLE MARKS								
7	<p><b>(a)</b> Any <b>two</b> from:  Enter keywords or phrases [1]  Use logical operators [1]/Plus (+) and Minus (-) [1]/[1] complex logic [1]/  AND/OR/NOT [1]  Quotation marks [1]</p> <p><b>(b)</b> Narrow by group, e.g. images  To <b>view</b> html pages/web pages</p> <p><b>(c)</b> Any <b>two</b> from:  History [1]  Favourites [1]  Bookmark [1]  Back Button [1]/any navigation button</p>	<p>[2]</p> <p>[1]</p> <p>[2]</p> <p style="text-align: center;">5</p>								
8	<p><b>(a)</b> Record [1]  Field [1]</p> <p><b>(b)</b> <b>(i)</b> Member ID</p> <p><b>(ii)</b> Uniquely identifies records</p> <p><b>(c)</b> Surname: Text/Character/String [1]  Paid: Boolean/Yes/No/Character/Text/String [1]</p> <p><b>(d)</b> <b>(i)</b> Query</p> <p><b>(ii)</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">CRITERIA</th> <th style="width: 50%;">Tick (✓) Answer</th> </tr> </thead> <tbody> <tr> <td>=&lt;01/01/1986 And &gt;=31/12/1989</td> <td></td> </tr> <tr> <td>&gt;=01/01/1986 And &lt;=31/12/1989</td> <td></td> </tr> <tr> <td>&gt;01/01/1986 And &lt;31/12/1989</td> <td style="text-align: center;">✓</td> </tr> </tbody> </table>	CRITERIA	Tick (✓) Answer	=<01/01/1986 And >=31/12/1989		>=01/01/1986 And <=31/12/1989		>01/01/1986 And <31/12/1989	✓	<p>[2]</p> <p>[1]</p> <p>[1]</p> <p>[2]</p> <p>[1]</p> <p>[1]</p> <p>[1]</p> <p style="text-align: center;">8</p>
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>=01/01/1986 And <=31/12/1989										
>01/01/1986 And <31/12/1989	✓									

**9 Level 0 ([0])**

Answer not worthy of credit

**Level 1 ([1]–[2])**

The candidate mentions how one or two from list of spreadsheets and databases can be tested. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited. There is little use of specialist terms.

**Level 2 ([3]–[4])**

The candidate discusses briefly how one (3 marks) or two (4 marks) of spreadsheets and databases can be tested. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory. There is some use of specialist terms.

**Level 3 ([5]–[6])**

The candidate discusses well two things from each list how a spreadsheet and a database can be tested. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is always clear. The candidate demonstrates good form and style appropriate to the question. The organisation of the answer is good. There is good use of specialist terms.

Answers may include:

Spreadsheet

Testing validation

Do formula accurately calculate totals/figures?

Are data/cells correctly formatted?/all data visible

When changes are made in cells is the change carried throughout the data?

Do graphs and chart correctly reflect the data?

Logic testing

Absolute cell reference testing

Databases

Do queries return correct results?

Do reports contain the correct data?

Is the report layout suitable?

Do buttons/macros perform the correct tasks?

Are relationships set up correctly?

Are data types suitable for data stored?

Validation rules?

[6]

6

AVAILABLE  
MARKS



- 10 (a) (i) Local Area Network [1]
- (ii) Any **two** from:  
 Peripherals can be shared [1]  
 Data can be shared [1]  
 Users can log on at any workstation to access their files [1]  
 Users can communicate [1]  
 Enhanced security [1]/levels of access [1]/usernames and passwords [1]  
 Shared software [1] [2]
- (b) (i) Any **two** from:  
 Allows the user/software to communicate with hardware/system [1]  
 Manages system resources [1] memory/storage [1]/allocation of tasks [1]  
 Security [1] [2]
- (ii) Graphical User Interface [1] consisting of Menus, Icons, Pointers and Windows [1] [2]
- (c) **Level 0 ([0])**  
 Answer not worthy of credit.

**Level 1 ([1]–[2])**

The candidate mentions the role of one or two of a firewall or router on a network. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited. There is little use of specialist terms.

**Level 2 ([3]–[4])**

The candidate discusses the role of one (3 marks) or both (4 marks) of a firewall and router on a network. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory. There is some use of specialist terms.

**Level 3 ([5]–[6])**

The candidate discusses well both the role of a firewall and router on a network. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is always clear. The candidate demonstrates good form and style appropriate to the question. The organisation of the answer is good. There is good use of specialist terms.

Answers may include:

Firewall

- Prevents files from entering or leaving the network
- Protects from unauthorised access outside the LAN
- Can assist in filtering websites
- Provides protection against viruses/unauthorised access

Router

- Shares an Internet connection between devices
- Routes/directs data around the network [6]

AVAILABLE  
MARKS

13

11 [1] for each correct answer.

DEFINITION	TERM
A term which describes sound, video, animation pictures and text when used together	MULTIMEDIA
The use of the Internet to make phone calls	VOIP
Equipment used to process payments at a supermarket checkout	EFTPOS
Cables which transfer data using pulses of light	FIBRE-OPTIC
A form of computer memory which is located close to the processor	CACHE
A method used to ensure data entered into a computer system is within limits	VALIDATION
Text used by web browsers to locate a web address on the Internet	URL

[7]

**Total**

**AVAILABLE  
MARKS**

7

**90**