

GCSE

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

Summer 2009

Mark Schemes

Issued: October 2009

**NORTHERN IRELAND GENERAL CERTIFICATE OF SECONDARY EDUCATION (GCSE)
AND NORTHERN IRELAND GENERAL CERTIFICATE OF EDUCATION (GCE)**

MARK SCHEMES (2009)

Foreword

Introduction

Mark Schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of 16 and 18-year-old students in schools and colleges. The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes therefore are regarded as a part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

The Council hopes that the mark schemes will be viewed and used in a constructive way as a further support to the teaching and learning processes.

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Rewarding Learning

**General Certificate of Secondary Education
2009**

Information and Communication Technology

Short Course

Paper 1

Foundation Tier

[G5301]

TUESDAY 19 MAY, AFTERNOON

**MARK
SCHEME**

- 1 (a) C [1]
 (b) A [1]
 (c) C [1]
 (d) A [1]
 (e) C [1]
 (f) B [1]
 (g) A [1]
 (h) A [1]
 (i) B [1]
 (j) B [1]

AVAILABLE
MARKS

10

2 (a)

Sensor	Tick(✓)
Heat	
Light	
Pressure	✓
Motion	✓

[2]

- (b) Convert analogue signals to digital signals [1]
 Allow sensor to connect/communicate with PC [1]
 Convert analogue to digital [1]
 do **not** accept a restatement of the stem
 [1] for each correct answer to a total of [2]

[2]

4

3 (a)

Output	File Format
Printed copies of instructions on how to play his music	doc
Sound files of him playing his music	MP3
Images of the instruments he teaches	jpeg

[3]

- (b) Can sell 24 × 7 [1]/greater customer base [1]/Database of customers is built up [1]/no premises required [1]/fewer overheads [1]
 Improved advertising potential [1]
 Electronic files can be sold online/via downloading [1]
 [1] for each correct answer to a total of [2]

[2]

(c)

Equipment	Tick
Word processor	
Browser	
MODEM	✓ [1]
Broadband link	✓ [1]

[2]

- (d) Digital Versatile/Video Disk

[1]

8

4 (a) (i) Local Area Network

[1]

(ii) Any one from:

- Data can be backed up [1]
- User activities can be monitored [1]
- Peripheral devices can be shared [1]
- Software can be shared [1]
- Username and password security available [1]/enhanced security [1]
- Users can save work centrally on the network's file server [1]
- Users can retrieve work from any workstation on the network [1]
- Users can communicate with each other [1] (no reference to online)
- Users can share data [1]

[1]

(iii) Any one from:

- Requires specialist knowledge to operate [1]/manage them [1]
- Expensive to set up [1]
- Server failure may mean no computers will operate [1]

[1]

			AVAILABLE MARKS	
<p>(b) (i) Any one from: Interact/communicating across a network/link using sound and moving images/video (+ devices acceptable) [1] Face-to-face conference across a network [1] [1]</p> <p>(ii) Any three from: Video camera/web cam [1] (not video recorder – not camera) Microphone [1] Speakers [1] Screen/TV/monitor [1] Computer [1] High speed data communications link [1] [3]</p> <p>(iii) Any one from: Solicitors will be able to see each other while speaking [1] Improved communication and better relationships because of human aspect [1] Technology can include output from pc screen [1] [1]</p> <p>(iv) Any one from: Fax machine must be switched on or manned to receive faxes [1] Information received cannot be edited [1] [1]</p> <p>(v) Any one from: Sending signed/legally binding/drawing documents to clients [1] Fax machine can send handwritten/signed/hard copy documents [1] [1]</p> <p>5 (a) (i) Any two from: Working remotely/from home [1] using communication technology/Internet/computer and Internet link to communicate with the company [1] [2]</p> <p>(ii) Any two from: Can recruit from any area in the world [1] Greater chance of finding suitable applicants/greater pool of applicants [1] Fewer overheads/fewer offices [1] Labour market cheaper elsewhere [1] No travel expenses [1] [2]</p> <p>(b) (i) Random Access Memory [1]</p> <p>(ii) Better quality graphics on screen because there are more pixels per unit area [1]</p> <p>(c) Data Protection (Act) not DPA [1]</p>			10	
				7

- 6 (a) (i) Any **one** from:
 Can book at anytime [1]
 Written/immediate confirmation [1] [1]
- (ii) Any **one** from:
 May not have a computer/access to the internet/credit card [1]
 Lack of IT competence/confidence [1] [1]

(b) (i)

Statement	Tick (✓)
The WWW is the information stored on the Internet	✓
The Internet is a set of web addresses	
The Internet is a network of computers and communication links	✓
The WWW is a set of web addresses	

[2]

- (ii) A website which is accessible only to authorised users/
 from within an organisation [1] 5

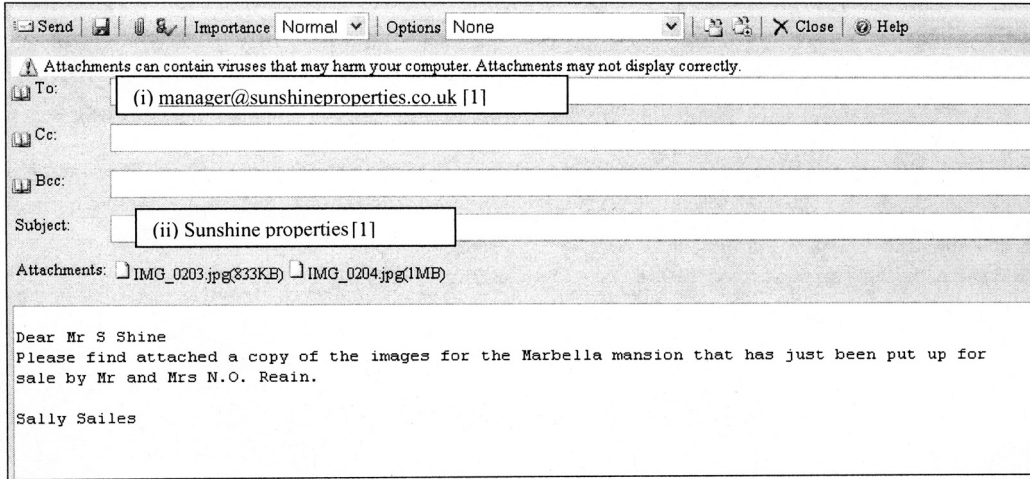
7 (a) RECORDS [1] FIELDS [1] FORMS [1] [3]

(b) Report [1] query [1] [2] 5

AVAILABLE
MARKS

			AVAILABLE MARKS
8	<p>(a) Cleared Merged Pasted [1]</p> <p>(b) (i) $C6*B6$ or $=C6*B6$ or $C6 \times B6$ or C6 multiplied by B6 [1]</p> <p style="padding-left: 20px;">(ii) $D6-F6$ or $=D6-F6$ [1]</p> <p>(c) D4 [1]/G4 [1]/G8 [1] [3]</p> <p>(d) (i) Pie chart [1]</p> <p style="padding-left: 20px;">(ii) A3:A6 [1] and G3:G6 [1] or A3 to A6 [1] and G3 to G6 [1] [2]</p> <p style="padding-left: 20px;">(iii) Bar chart [1]/line graph [1] [1]</p> <p style="padding-left: 20px;">(iv) Any one from: Easier to see patterns and trends (or example thereof) [1] Easier to read/understand [1] [1]</p> <p style="padding-left: 20px;">(v) Best rental car [1]/relative rental figures [1] [1]</p>		12
9	<p>(a) Text which occurs at the bottom of every page of a document [1]</p> <p>(b) Any one from: To view/check the print layout/appearance of the document [1] In case there is something wrong and she wastes paper printing it [1] [1]</p> <p>(c) The picture is a hyperlink [1]</p> <p>(d) Any one from: Not in the dictionary [1]/may be place names or people's names [1] [1]</p> <p>(e) Any one from: Word spelt correctly but used in the wrong way, e.g. "there" and "their" [1] Uses another language/dictionary [1] [1]</p>		5

10 (a)



[2]

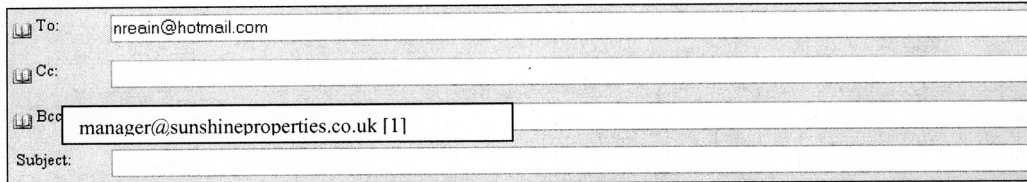
(b) Any **one** from:

They may have been corrupted by viruses [1]/may not have appropriate software [1]

Virus protector stops it from showing properly [1]

[1]

(c)



[1]

4

11 (a) Scanner [1] Database [1] Beep [1] Description [1]

[4]

(b) Any **two** from:

Product code (or Product number) [1]/manufacturer code [1]/

country of origin/country of origin code [1]/check digit [1]

[2]

6

AVAILABLE MARKS

12 (a)

File Format	Tick
.htm	
.http	✓
.html	

[1]

(b) Any **one** from

Can slow the time taken for the page to appear on the screen [1]

[1]

User may not have correct plugin [1]

2

13 (a) PORTRAIT

[1]

(b) Any **two** from:

Templates/layouts/design sets [1]

Tables [1]

Frames/sections [1]

Text boxes [1]

Graphic overlay/patterned/coloured background [1]

Colour/font size/font type/style [1] – only 1 ref to font accepted

Columns [1]

Borders [1]

Text wrap [1]

Wizard/help/instructions to assist user [1]

[2]

(c) LANDSCAPE

[1]

(d) (i) CENTRED

[1]

(ii)

Feature	Tick
Right Justify	
Underline	
Table	✓
Left Justify	✓
Italics	

[2]

7

AVAILABLE
MARKS

14

Definition	Term
A program designed to damage a computer system.	VIRUS
A digit added to the beginning or end of a number to verify that the number entered is an authentic code.	CHECK DIGIT
A way of encoding data before transmitting it on a network.	ENCRYPTION
A company which provides the user with a connection to the Internet.	ISP
A measure of the quality of an image.	RESOLUTION
A device used to capture data by passing light over the image.	SCANNER
An optical storage device.	CD-ROM
A measure of the amount of data which can travel along a communication cable.	BANDWIDTH
A set of rules used for communicating over networks.	PROTOCOL
A name used to describe data held as 1s and 0s.	DIGITAL

[10]

10

QWC

5

Total**100**AVAILABLE
MARKS

The assessment of quality of written communication.

Marks are to be allocated to QWC in accordance with the following criteria.

Performance Level	Criteria	Marks
Threshold	Candidates spell, punctuate and use the rules of grammar with reasonable accuracy; they use a limited range of specialist terms appropriately.	0, 1
Intermediate	Candidates spell, punctuate and use the rules of grammar with considerable accuracy; they use a good range of specialist terms with facility.	2, 3
High	Candidates spell, punctuate and use the rules of grammar with almost faultless accuracy; deploying a range of grammatical constructions; they use a wide range of specialist terms adeptly and with precision.	4, 5



Rewarding Learning

**General Certificate of Secondary Education
2009**

Information and Communication Technology

Short Course

Paper 1
Higher Tier

[G5302]

TUESDAY 19 MAY, AFTERNOON

**MARK
SCHEME**

- 1 (a) C
 (b) A
 (c) C
 (d) A
 (e) C
 (f) B
 (g) A
 (h) A
 (i) B
 (j) B

[10]

AVAILABLE
MARKS

10

- 2 (a) Motion/movement sensor/Pressure sensor [1]

[1]

- (b) Any **two** from:

Measures a physical quantity [1]

Measures changes in environmental conditions [1]

Captures analogue data signals [1]

So that data can be recorded/processed on a computer [1]

[2]

- (c) Convert analogue signals (from sensor) to digital signals for computer [1]
 to allow sensor to connect to PC Convert analogue to digital [1]

[2]

- (d) Feedback ensures that the room temperature is maintained at the level selected [1]

[1]

6

- 3 (a)

Output	File Format
Printed copies of instructions for using spreadsheets	doc
Sound files of his voice giving instructions on using a database	MP3
Video tutorials on using the wordprocessor.	avi

[3]

- (b) Any **two** from:

Can sell 24 × 7 [1]

Greater customer base [1]

Database of customers is built up [1]

No premises required [1]

Fewer overheads [1]

Improved advertising potential [1]

Files can be sold online/via downloading [1]

[2]

(c)

Equipment	Tick
Wordprocessor	✓
Browser	
Modem	
HTML files	✓
Broadband link	
Spreadsheet	✓

[3]

(d) FTP/HTTP (acceptable) [1]

[1]

(e) optimise graphics/do not use large graphics files (or large quantities of graphics)/ensure video files are compressed [1]

[1]

(f) Digital Versatile/Video Disk [1]

[1]

11

4 (a) (i) Any **two** from:

Data can be backed up [1]

User activities can be monitored [1]

Peripheral devices can be shared [1]

Software can be shared [1]

Username and password security can be implemented/enhanced security [1]

Users can save work centrally on the network's file server [1]

Users can retrieve work from any workstation on the network [1]

Users can communicate with each other [1] No reference to online

Users can share data [1]

[2]

(ii) Any **one** from:

Require specialist knowledge to operate/manage them [1]

Potential for unauthorised access [1]

Server failure may mean computers do not operate [1]

[1]

(iii) Any **three** from:

Stores all the data on network [1]

Stores all applications/software for network [1]

Connects all the computers on the network/Allows communication between users on network [1]

Stores usernames and passwords [1]

Manages shared peripherals [1]

Manages resource allocation [1]

[3]

(b) Research [1]

Communication [1]

1 example of each

[2]

AVAILABLE
MARKS

(c)

Protocol	Tick
Wireless Additional Protocol	
Wireless Application Protocol	✓
Wire Application Protocol	
Wireless Additional Protocol	

[1]

(d) (i) Interact/communicating across a network/link using sound and moving images/video [1] (accept devices)

[1]

(ii) Any **three** from:

Video camera/web cam [1] – not video recorder – not camera

Microphone [1]

Speakers [1]

Screen/TV/monitor [1]

[3]

(iii) Any **two** from:

Bandwidth determines the speed of data transmission/amount of data transmitted [1]

The higher the bandwidth the faster the data transmission [1] the better the quality of the video and sound will be [1]

[2]

(iv) Any **two** from:

Solicitors will be able to see each other while speaking [1]

Improved communication and better relationships because of human aspect [1]

Technology can include output from PC screen [1]

[2]

(e) Sending signed/legally binding/drawing documents to clients [1]/

Fax machine can send handwritten/signed/hard copy documents [1]

[1]

AVAILABLE
MARKS

18

- 5 (a) (i) Working remotely/from home [1]
Using communications technology/internet/computer and Internet link to communicate with the company [1] [2]
- (ii) Can recruit from any area in the world [1]
Greater chance of finding suitable applicants/greater pool of applicants [1] [2]
- (b) (i) Any **two** from:
Can work from home [1]
Can work flexible hours [1]
No commuting time/costs [1]
Less stress from travelling [1]
More job opportunities [1] [2]
- (ii) Any **two** from:
Teleworkers may not share company ethos [1]
Cannot ensure they work the correct hours/monitoring difficult [1]
Expensive equipment/set up costs [1]
Additional training may be required [1]
High dependency on technology [1] [2]
- (c) RAM
Ensure substantial/high amount of RAM [1]
More RAM better performance of game [1] [2]
- Monitor
Use a high resolution monitor [1] to ensure that user has a good representation of graphics onscreen [1] [2]
- (d) (i) Data Protection Act
(must use full term – not DPA) [1]
- (ii) Any **two** from:
Personal data must be processed fairly/processed for purpose [1]
Adequate/relevant/not excessive [1]
Accurate/up-to-date [1]
Not kept longer than necessary [1]
Processed in accordance with the owner’s rights [1]/can view data [1]
Kept secure [1]
Not transferred without protection [1] or permission [1]
Not transferred outside the UK [1] [2]
- (iii) Data/Information Commissioner [1] [1]
- (iv) Data Controller – the person in a company who is responsible for controlling the way in which personal data is processed/managed [1]
Data Subject – the individual who is the subject of the personal data [1] [2]

- 6 (a) (i) Any **one** from:
 Can book at anytime [1]
 Written/immediate confirmation [1] [1]
- (ii) Any **one** from:
 Customers must have computer [1]
 Cost/specialist expertise needed to set up/maintain system [1]
 Needs to be kept secure [1]
 Website failure [1] [1]
- (iii) Any **one** from:
 May not have a computer/access to the Internet/credit card [1]
 Lack of I.T. competence/confidence [1] [1]
- (b) (i)
- | Statement | |
|--|---|
| The WWW is the information stored on the Internet | ✓ |
| The Internet is a set of web addresses | |
| The Internet is a network of computers and communication links | ✓ |
| The WWW is a set of web addresses | |
| To access the WWW you need a web browser | ✓ |
- More than 3 ticks – [0] [3]
- (ii) A website which is accessible only to authorized users/from within an organisation [1] [1]
- (iii) Any **two** from:
 Post important information [1]
 Allow employees to upload information [1]
 Better communication for employees [1] [2]

- 7 (a) Records [1]
 Fields [1]
 Criteria [1]
 Form [1] [4]
- (b) (i) Postcode/Priority [1]
- (ii) Any **one** from:
 To calculate cost of orders less discount [1]
 Calculate the amount owed by customer [1] [1]
- (iii) Query [1]
- (iv) Uniquely identifies each record in the table/database [1]

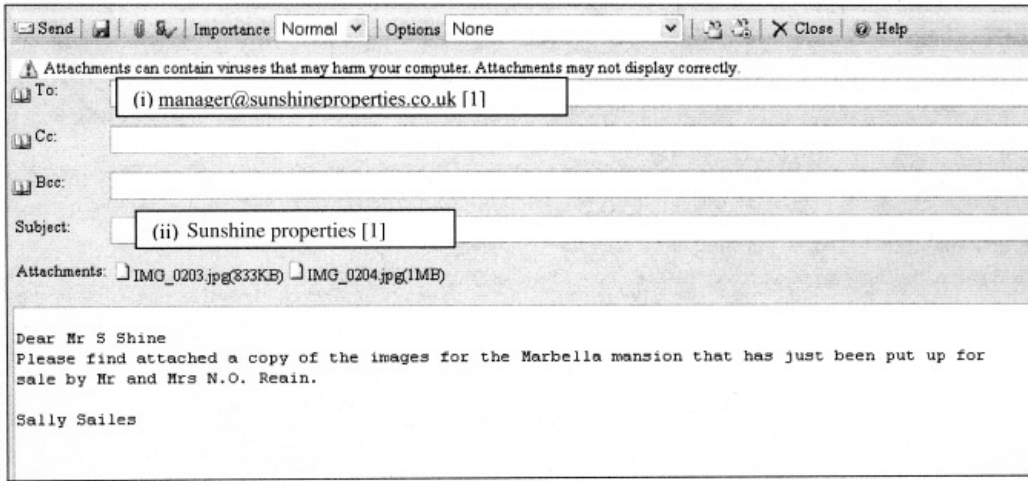
AVAILABLE
MARKS

9

8

			AVAILABLE MARKS
8	(a) Merged	[1]	
	(b) (i) $C6*B6$ or $=C6*B6$ (accept \times or multiplied by)	[1]	
	(ii) $D6-F6$ or $=D6-F6$	[1]	
	(iii) $\text{Sum}(g3:g6)/\text{sum}(g3 \text{ to } g6)/g3+g4+g5+g6$	[1]	
	(c) (i) A3:A6 [1] and G3:G6 [1] or A3 to A6 [1] and G3 to G6 [1]	[2]	
	(ii) Easier to see patterns and trends [1]/Easier to read and understand [1] [1]	[1]	
	(iii) Best hiring car [1]/relative hiring figures [1]	[1]	
	(iv) More explanatory title [1]/more information on purpose of graph [1] [1]	[1]	
	(d) (i) $C6*B13$ or $C6*\$B\13	[1]	
	(ii) A cell reference, which does not change [1] when copied to different cells in the spreadsheet [1]	[2]	
	(iii) $\$B\13 or B13	[1]	
	(iv) Only 1 change is required in cell B13 if the driver cost per hour changes.	[1]	14
9	(a) Text which occurs at the bottom of every page of a document [1]	[1]	
	(b) She may not want numbers on the cover page of her document. [1]	[1]	
	(c) (Right click and) remove the hyperlink [1]/save image locally [1]	[1]	
	(d) Not in the dictionary [1]/may be place names or people's names [1]	[1]	
	(e) Word spelt correctly but used in the wrong way, e.g. "there" and "their" [1] Suitable example needed	[1]	5

10 (a)

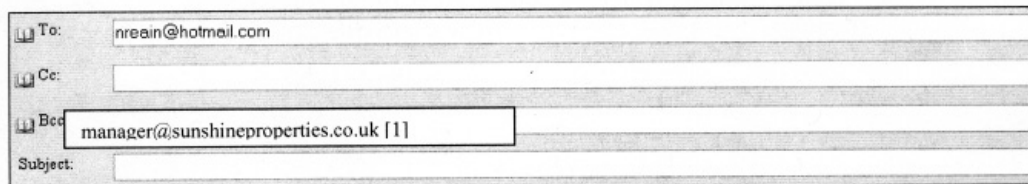


[2]

(b) They may have been corrupted by viruses [1]/may not have appropriate software [1]

[1]

(c)



[1]

(d) (i) Read receipt request is sent when the receiver opens and reads the email [1] whereas delivery receipt request is sent whenever the email reaches the recipient's inbox [1]

[2]

(ii) Read receipt request [1]

[1]

7

11 (a) Electronic Funds Transfer Point of Sale [1]

[1]

(b) EFTPOS has a card reader which allows customers to pay using credit/debit cards [1]

[1]

(c) Any two from:

No automatic tracking of stock [1]

Will have to store more cash [1]

Narrower customer base means less profit [1]

[2]

(d) Scanner [1] Database [1] Beep [1] Description [1]

[4]

(e) Manufacturer code [1]/country of origin [1]/check digit [1]

[1]

9

AVAILABLE MARKS

12 (a)

File Format	Tick
.htm	
.http	✓
.html	

[1]

- (b) Websites can appear differently on different browsers [1]/
Not all browsers work the same way [1]

[1]

- (c) Any **one** from:

She may not have uploaded all of the pictures [1]
Her pictures may be in a different folder than previously [1]
Broken links [1]
Wrong file format [1]
Picture not displayed because of settings/formats [1]
She may have moved the pictures to a different folder [1]

[1]

- (d) Can slow the time taken for the page to appear on the screen [1]

[1]

- (e) Data collected is in the correct format [1]/the required data will be collected [1]

[1]

- (f) Any **one** from:

Generally cannot be edited without a full version of Adobe software [1]
applicants will print it and fill it out manually [1]
Cannot be read without appropriate software [1]

[1]

6

13 (a) Portrait [1]

[1]

- (b) Any **one** from:

Templates/layouts/design sets [1]
Tables [1]
Frames/sections [1]
Text boxes [1]
Graphic overlay/patterned/coloured background [1]
Colour/font size/font type/style [1] – only [1] for ref to font/colour
Columns [1]
Borders [1]
Text wrap [1]
Wizard/help/instructions to assist the user [1]

[1]

2

AVAILABLE
MARKS

14

Definition	Term
A program designed to damage a computer system.	Virus
A digit added to the beginning or end of a number to verify that the number entered is an authentic code.	Check Digit
A way of encoding data before transmitting it on a network.	Encryption
A company which provides the user with a connection to the Internet.	ISP
A measure of the quality of an image.	Resolution
A device used to capture data by passing light over the image.	Scanner
An optical storage device.	CD-Rom
An injury which occurs as a result of using the same muscles over and over again.	RSI
A set of rules which govern the way in which data is transmitted on a network.	Protocol
A name used to describe data held as 1s and 0s.	Digital

[10]

10

TOTAL**133**

QWC

7

140AVAILABLE
MARKS

The assessment of quality of written communication.

Marks are to be allocated to QWC in accordance with the following criteria.

Performance Level	Criteria	Marks
Threshold	Candidates spell, punctuate and use the rules of grammar with reasonable accuracy; they use a limited range of specialist terms appropriately.	0, 1, 2
Intermediate	Candidates spell, punctuate and use the rules of grammar with considerable accuracy; they use a good range of specialist terms with facility.	3, 4, 5
High	Candidates spell, punctuate and use the rules of grammar with almost faultless accuracy; deploying a range of grammatical constructions; they use a wide range of specialist terms adeptly and with precision.	6, 7

