

General Certificate of Secondary Education June 2012

ICT 45201

(Specification 4520)

Unit 1: Systems and applications in ICT

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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COMPONENT NUMBER: 45201

COMPONENT NAME: GCSE ICT Full Course

STATUS: Final v1.0

DATE: July 2012

To Examiners:

1. When to award '0' (zero) when inputting marks on CMI+:

A mark of 0 should be awarded where a candidate has attempted a question but failed to write anything credit worthy.

- Insert a hyphen when a candidate has not attempted a question, so that eventually the Principal Examiner will be able to distinguish between the two (unattempted/nothing credit worthy) in any statistics.
- 2. This mark scheme contains the correct responses which we believe that candidates are most likely to give. Other valid responses are possible to some questions and should be credited. Examiners should refer to a Team Leader off-mark scheme responses that they believe are creditworthy.

1	(a)		A monochrome laser printer A colour laser printer A digital projector	Correct answer only Correct answer only Correct answer only	1 1 1
1	(b)		An operating system	Correct answer only	1
1	(c)		Scanner Web cam	Correct answer only Correct answer only	1 1
1	(d)		CD-ROM or Flash memory	Correct answer only	1
1	(e)		computer breaks down/crashe The backup can then used to r /transfer /up-to-date copy the cas a second copy/ exactly the	, corrupted, deleted accidentally, s/damaged. recover/ restore/replace/retrieve original data. Or the idea it is kept same file/ spare copy/ get the file on still have the data. OR cannot	1
2	(a)	(i)	F (allow Inbox)	Correct answer only	1
2	(a)	(ii)	H (allow Signature)	Correct answer only	1

2	(a)	(iii)	B (allow Bcc)	Correct answer only	1
2	(b)	(i)	E-mails that are unwanted and/or no		1
				Correct answer only	'
			Identical e-mails that are sent in bull organisations	k, often from a commercial Correct answer only	1
2	(b)	(ii)	Use of spam/junk e-mail filters/filters	c/block snam	
	(b)	(11)	Use of spam/junk e-mail folders		
			Not signing up to offers on the Interr	net	
			Use features in Outlook (search for		
			characters)	widely about billings of	
			NOT just delete /NOT cookies		
			The Figure delete / The Figure 1	Any 1 x 1 mark	1
		l		•	
2	(c)		To get you to send them money		
			To get/obtain access/steal to your se	ecure/personal/sensitive	
			details		
			To access as details such as bank a	account number/usernames	
			/passwords/card details	Any 1 x 1 mark	1
				Any IXI mark	'
					<u> </u>
3	(a)	Name			
		Title		at least 3	
			ess (other addresses count as REP	•	
		Postco	ode hone numbers	at least 7 (3 space 3)	
			none number (day)	at least 11	
			none number (evening)	at least 11	
			ct tel. number/emergency number	at least 11	
		Mobile	e tel. number	at least 11	
		041	NOTE MAX TWO TELEPHONE NU	IMBERS	
			fields I address	at least 20/memo	
		Gende		at least 6 (allow M/F	
				or tick box)	
		Photo		box to fit	
			of membership/expiry of membership	at least 8 (2-2-2/4)	
			ication given	at least 10	
		1	(NOT age)	at least 8 (2-2-2/4)	
			over 18 and YES/NO) al conditions	at least 3 at least 20/memo	
			ai conditions s issues	at least 20/memo	
			ership type	at least 10/memo/list	
			ent type/method	at least 20/memo	
		Signat	ture	memo	
		NB - 0	could use the date at end of form		
		NOT 1	Ul. Not dooten wat deatails addition	aa ata	
			NI – Not doctor, not doctor's addres		
		Duxes	OR [_] – open boxes OR boxes OR	ucai uasiies uilless Illeiilo	

specified
Memo = lines/boxes/dashes
IGNORE FILLING IN

Mark only the first 4 fields
Ignore correct duplicate fields e.g. 3rd telephone no – these do not count in the FOUR.
Look for;
Correct field name – do not penalise lack of capitals
Correct number of boxes/dashes memo field for the corresponding field name.
Award a mark for each TWO correct field names or number of boxes
6 correct scores 3 marks
3 correct scores 1 mark

3	(b)	Questionnaires Online/web based/Internet/mobile phone forms E-mail forms OCR scan of form Not just forms / NOT just e-mails NOT just Data Capture Form	
		NOT just interviews Any 2 x 1 mark	2

4	(a)		Readability - too difficult/hard to read. / Font too small or hard to read / clear text over images	
			Visual impact – Most important items not made to stand out.	
			Colour contrast between background is poor Details – hard to spot/see the information. Some key details	
			need to be made bigger.	
			Consistent layout – no consistent layout or style or use of the same font. Does not look professional	
			Fit for audience – not fit for a year 11 audience, would lose	
			their attention quickly. E.g. colourful to attract students	
			Exciting/relevance of a suitable image is needed. Don't stretch or squash images.	
			Any 2 x 1 mark	2
4	(b)		Buttons Correct answer only	
			Sound effects Correct answer only	2
4	(c)		First mark for the description	1
			The way in which the presentation moves/changes from one slide to another. Controls how the next slide is presented.	
			·	
			2 nd mark for a suitable example	
			 next page flies in from the right action buttons 	
			- click moves in next slide	
			- slide enters in to the sound of	
			breaking glass	
			- lots of others possible Any 2 x 1 mark	2
			•	
5	(a)	(i)	D (allow Feasibility study) Correct answer only	1
5	(a)	(ii)	A (allow Analysis) Correct answer only	1
		, ,		
5	(a)	(iii)	B (allow Design) Correct answer only	1
	(-)	()	_ (====================================	
· <u> </u>				

Two or more parties (people/organisations/countries) / Working together/work as a team Towards a common target/goal/outcome Recursive process	5	(b)	(bi) (bii)	Test data Actual results/outcomes/Test results Expected results/outcomes/ Desired outcomes of the test (NOT just desired outcomes) Allow Alpha/Beta testing for a max of 2 marks If heading is clearly wrong there is no follow on. However if the heading is clarified by the 'why it is needed' then the max is 1 mark Why needed – must link to correct part of b(i) Test data -to plan what data is needed to carry out the required tests Actual/Test results- to compare with the expected results (to see if the test works) Evaluate results/see if the system works Expected/Predicted results - to compare with the actual results / see what the test should give/show (to see if the test works) Predict what you think/expect will happen/be outcome or results Any 2 x 1 mark	2
together/work as a team Towards a common target/goal/outcome Recursive process Any 2 x 1 mark 2 6 (a) They will get very limited information about events in the rest of the world Correct answer only Those with businesses are likely to have a more restricted market Correct answer only 1 6 (b) (i) Help to reduce crime/deter criminals Help to catch/identify criminals/solve crimes (if caught on CCTV). Used as evidence Make people feel safer (feel good factor) Track missing people Any 2 x 1 mark 2 6 (b) (ii) Surveillance society issues privacy issues civil liberties issues Cost if reason given – buying/upkeep Any 1 x 1 mark 1 7 (a) (i) C (allow Forum) Correct answer only 1	5	(c)		Two or more parties (people/organisations/countries) / Working	
6 (a) They will get very limited information about events in the rest of the world Correct answer only 1 Those with businesses are likely to have a more restricted Correct answer only 1 6 (b) (i) Help to reduce crime/deter criminals Help to catch/identify criminals/solve crimes (if caught on CCTV). Used as evidence Make people feel safer (feel good factor) Track missing people 6 (b) (ii) Surveillance society issues privacy issues civil liberties issues Cost if reason given – buying/upkeep Any 1 x 1 mark 7 (a) (i) C (allow Forum) Correct answer only 1				together/work as a team Towards a common target/goal/outcome Recursive process	2
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Help to catch/identify criminals/solve crimes (if caught on CCTV). Used as evidence Make people feel safer (feel good factor) Track missing people Any 2 x 1 mark 2 6 (b) (ii) Surveillance society issues privacy issues civil liberties issues Cost if reason given – buying/upkeep Any 1 x 1 mark 1 7 (a) (i) C (allow Forum) Correct answer only 1	6	(a)		the world Correct answer only Those with businesses are likely to have a more restricted	•
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6 (b) (ii) Surveillance society issues privacy issues civil liberties issues Cost if reason given – buying/upkeep Any 1 x 1 mark 7 (a) (i) C (allow Forum) Correct answer only 1	6	(b)	(i)	Help to catch/identify criminals/solve crimes (if caught on CCTV). Used as evidence Make people feel safer (feel good factor)	
privacy issues civil liberties issues Cost if reason given – buying/upkeep Any 1 x 1 mark 7 (a) (i) C (allow Forum) Correct answer only 1				The state of the s	2
	6	(b)	(ii)	privacy issues civil liberties issues Cost if reason given – buying/upkeep	1
	7	(a)	(i)	C (allow Forum) Correct answer only	1
7 (a) (ii) B (allow Fax) Correct answer only 1		\ /	\		
	7	(a)	(ii)	B (allow Fax) Correct answer only	1

7	(a)	(iii)	D (allow Instant messaging) Correct answer only	1
7	(b)		Cheaper/free/lower taxes/no extra cables Additional facilities (at no extra cost) Integrate with other services (allow video conferencing idea)/ see each other / F2F Access from more locations/anywhere with WiFi link Share data/pictures/videos Any 2 x 1 mark	2
7	(c)		High rate data connection /more information in an agreed amount of time- allow fast/high speed connection Often delivered through cable, satellite or wireless (telephone lines OK) Speeds are usually quoted as download speeds (upload usually much slower) Greater bandwidth/wider range of frequencies Connection modem/router Any 2 x 1 mark	2
8	(a)		Maintain/control/monitor the temperature within the greenhouse Keep the temperature within limits/bounds Maintain the optimum temperature for the greenhouse Make sure the greenhouse is not too hot or too cold Check the temperature in the greenhouse is OK Any 1 x 1 mark	1
8	(b)	(i)	Heat sensor Correct answer only	1
8	(b)	(ii)	One might get broken/be faulty Large greenhouse may require several to cover the whole area Maybe hot or cold spots in the greenhouse Average reading could be taken/be more reliable Any 2 x 1 mark	2
8	(c)		Output stage A (too hot) Open windows/open vent/ turn on fan/ turn on air conditioning/ cooling system or device/ turn down/off heater 1 mark Will cool down/lower/decrease the temperature/ greenhouse is too hot/temperature too hot. 1 mark Output stage B (too cold) Turn on/up heaters /close windows or vent/turn off fan/air conditioning/heading system/device 1 mark To heat/warm up/ raise/increase the temperature / the greenhouse/temperature is too cold 1 mark	4

(i) Home page Correct answer only 9 (a) 1 Bookmark/Favourite (a) (ii) Correct answer only 1 (iii) Web/Internet browser Correct answer only (a) 9 (a) (iv) Refresh Correct answer only 1 9 (b) Offers customers' access/connection to the Internet/web access At a fee Connects to its customers using technology appropriate for delivering Internet Protocol packets or frames. Provide extra facilities/remote storage of data files for their customers/e-mail accounts to users/check for viruses Any 2 x 1 mark 2 Post Office Protocol **Correct answer only** 1 9 (c) Random Access Correct answer only 1 10 (a) 10 Use of icons and buttons Correct answer only (b) (i) 1 Window operations such as open and close **Correct answer only** 1 10 (b) (ii) Menu User Interface Command Line Interface (CLI) 1 Any 1 x 1 mark A film downloaded from the Internet as a video file 10 (c) (i) Correct answer only 1 Music download Correct answer only 1 10 (ii) Faster to transfer/send (c) Less/reduce storage/memory needed/used Make it smaller/reduce size May be too big to send/transfer Any 2 x 1 mark 2 **Correct answer only** Currency 11 1 (a)

11	(b)	Each feature to be cree Colours Bold Font size Right align/centre/left ali Show grid/use grid line/o Merge cells Widen/alter/resize/expan	gn/text alignment cell borders	3
			Ally 5 X T mark	<u> </u>
11	(c)	(i) =ROUND(B19/B16,2)	Correct answer only	1
11	(c)	figures after the decimal Rounded to 2 decimal p	laces displayed this way/allow it to look like or cy.	
			Any 2 x 1 mark	2
11	(4)	rirstly read the whole answer .		
	(d)	Next decide which mark band's piven. Finally (if needed), is the answernark range No rewardable material 0 mark cower mark range 1 – 2 mark. There are simple even vague for will not be clear why these fewill not be clear why the sewill not be clear under the clearly correct examples that clearly correct	eatures given for using a spreadsheet. Eatures are better. Iterstanding shown through the use of describe appropriate features of a abase. At least two examples given are scription/reasoning. Iterstanding shown through the use of describe the advantages of a abase. At least two examples given are	
		Possible examples include Calculations – easier to use or Formulae – wider range available More cell formats for calculation Replication of formula Autosum Modelling Easier to edit data/formula Use multi-linked sheets Conditional formatting	le	5

12	(a)		WebzServ must keep all data accurate and up to date Correct answer only WebzServ must keep data secure	
			Correct answer only	2
12	(b)	(i)	First mark Gaining/trying to gain unauthorised/illegal access to another computer/by passing/getting around the security system Second mark	1
			With the intent to steal/destroy/change data or cause 'mischief' to the computer	1
12	(b)	(ii)	Firewalls	
12	(5)	(")	Intrusion detection	
			Password/usernames etc	_
			Encryption Any 1 x 1 mark	1
12	(b)	/:::\	First mark	Ι
12	(b)	(iii)	A piece of software/program/code	1
			Second mark Replicates itself Can copy/amend/destroy/corrupt data OR the computer system	
			Can 'spy' on the computer's use (security)	1

12 Firstly read the whole answer. (c) Next decide which mark band's description best matches the answer Finally (if needed), is the answer given, at the **top or the bottom** of the mark range No rewardable material 0 marks Lower mark range 1 - 2 marks There are simple even vague statements relating to responsible behaviour online. Mid mark range 3 - 4 marks There is evidence of **some understanding** shown through the use of mostly correct examples that describe advice about responsible behaviour online. At least two examples given are supported by some relevant description/reasoning. High mark 5 marks There is evidence of a **clear understanding** shown through the use of correct examples that clearly describe advice about responsible behaviour online. At least two examples given are well supported by reasoned arguments. Possible examples include Not misusing images Not making defamatory statements/libel/slander online Hazards from:-Phishing emails Mirror image websites 5 Sending viruses accidentally or carelessly Patient Name 13 (a) Correct answer only

	(ω)		- audit Hame	correct union of citing	·
40	(1-)	(:)	00007040 1 00007000	On any of the second surface	T 4
13	(b)	(i)	00897649 and 00897602	Correct answer only	1
13	(b)	(ii)	00897601	Correct answer only	1
13	(b)	(iii)	00897672	Correct answer only	1
13	(c)	(i)	Make him an impossible/unreal	• ,	
			alive/would be dead by now/ no of Would make him 160/161/162 by		
			greater than 150)	Tiow (or some riight age like	
			Does not match the other record	s/ other DOBs	1
			<u>I</u>		
13	(c)	(ii)	Set a limit/range on DOB or Rai		
			Reasonable description of range	check 1 mark	2

13 (d) Firstly read the **whole answer**.

Next decide which mark band's description **best matches** the answer given.

Finally (if needed), is the answer given, at the **top or the bottom** of the mark range

No rewardable material 0 marks

Lower mark range 1 – 2 marks

There are simple even vague statements relating to using proprietary software rather than open source.

Mid mark range 3 - 4 marks

There is evidence of **some understanding** shown through the use of **mostly correct** examples that **describe** at least one advantage and one disadvantage of proprietary software rather than open source. Examples given are supported by some relevant description/reasoning.

High mark 5 marks

There is evidence of a **clear understanding** shown through the use of **correct** examples that **clearly describe** at least one advantage and one disadvantage of proprietary software rather than open source. Examples given are well supported by reasoned arguments.

Possible examples include Proprietary software advantages

- Vendor professional services/support from vendor
- Easier to adopt in an organisation/many people know the software already.
- Automated/regular updates
- Reduced ICT support needed
- Security is 'part of the package'

Proprietary software disadvantages

- Not usually free or at low cost
- No availability of the source code and no right to modify it
- No right to redistribute modifications and improvements to the code
- No right to use the code in any way (such as add it to new programs)
- There is often single entity/person/company on which the future of the software depends
- 'Black boxes' are possible
- Per-copy fees can be asked for modified versions
- No new forum for democratic action.

5

14	Firstly read the whole answer. Next decide which mark band's description best matches the answer given. Finally, is the answer given, at the top, middle or the bottom of the mark range No rewardable material	0 marks	
	Subject Criterion Context There are simple, even vague statements about communications or entertainment technology. Quality of Written Communication The candidate has used a form and style of writing which has many deficiencies. Ideas are not often clearly expressed. Sentences and paragraphs are often not well-connected or at times bullet points may have been used. Specialist vocabulary has been used inappropriately or not at all. Much of the text is legible and 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.	1-3 marks	
	Subject Criterion Context There is evidence of some understanding shown by a limited description of at least two communications or entertainment technologies. Quality of Written Communication The candidate has used a form and style of writing which has some deficiencies. Ideas are not always clearly expressed. Sentences and paragraphs may not be well-connected or at times bullet points may have been used. Specialist vocabulary has been used on a limited number of occasions. Most of the text is legible and some of the meaning is clear. There are some errors of spelling, punctuation and grammar but it should still be possible to understand most of the response.	4-6 marks	
	Level 3 Higher mid mark range Subject Criterion Context There is evidence of a more developed understanding shown through the use of at least three suitable examples that describe the impact on society. At least one example comes from 'communications technology' and at least one example comes from 'entertainment technology'. 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. 7-9 Text is **legible** and **most** of the meaning is **clear**. There are marks occasional errors of spelling, punctuation and grammar. Level 4 High mark range **Subject Criterion Context** There is evidence of a **clear understanding** shown through the use of relevant examples that clearly describe at least one valid advantage and one valid **disadvantage** of the **impact** on society. Examples are well supported by reasoned arguments. There is evidence of a clear understanding shown through the use of at least three suitable examples that discuss the impact on society. At least one example comes from 'communications technology' and at least one example comes from 'entertainment technology' **Quality of Written Communication** The candidate has selected and used a form and style of writing appropriate to purpose and has expressed complex ideas clearly and fluently. Sentences and paragraphs follow on from one another clearly and coherently. Specialist vocabulary has been used **appropriately** throughout. Text is **legible** and the meaning is **clear**. There are **few** if any errors of 10-12 spelling, punctuation and grammar. marks **Quality of Written Communication Skills** The candidate's quality of written communication skills will be one of the factors influencing the actual mark an examiner will give within a level of response. The quality of written communication skills associated with each level is indicated above Possible examples include Wireless (WFi and Bluetooth) and Wired networks, network speeds **Internet revolution (various) Developing countries issues** Confidentiality/security of data/cookies Keeping in contact/social networks **Entertainment systems –** TV/video streaming, games consoles. 12 Integrated entertainment systems

Firstly read the whole answer. 15 Next decide which mark band's description best matches the answer Finally, is the answer given, at the **top**, **middle or the bottom** of the mark range No rewardable material marks Level 1 Lower mark range **Subject Criterion Context** There are simple, even vague statements about issues/problems with sources of information. **Quality of Written Communication** The candidate has used a form and style of writing which has many deficiencies. Ideas are not often clearly expressed. Sentences and paragraphs are often not well-connected or at times bullet points may have been used. Specialist vocabulary has been used **inappropriately** or **not at all**. **Much** of the text is **legible** and **some** of the meaning is **clear**. There are many errors of spelling, punctuation and grammar but it 1-3 should still be possible to understand much of the response. marks Level 2 Lower mid mark range **Subject Criterion Context** There is evidence of **some understanding or use** shown by giving examples of at least two issues/problems with finding, selecting and using information from a range of sources. Examples are supported by limited descriptions. **Quality of Written Communication** The candidate has used a form and style of writing which has **some** deficiencies. Ideas are not always clearly expressed. Sentences and paragraphs may **not** be well-connected or **at times** bullet points may have been used. Specialist vocabulary has been used on a limited number of occasions. **Most** of the text is **legible** and **some** of the meaning is **clear**. There are **some** errors of spelling, punctuation and grammar but it 4-6 should still be possible to understand **most** of the response. marks Level 3 Higher mid mark range **Subject Criterion Context** There is evidence of a more **developed understanding** shown through the use of **suitable** examples that **describe** at least three valid problems with finding, selecting and using information from a range of sources. Examples are supported by suitable descriptions. **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.	7-9 marks	
Level 4 High mark range Subject Criterion Context There is evidence of a clear understanding shown through the use of relevant examples that discuss more than at least three problems with finding, selecting and using information from a range of sources. Examples are well supported by reasoned arguments. Quality of Written Communication The candidate has selected and used a form and style of writing appropriate to purpose and has expressed complex ideas clearly and fluently. Sentences and paragraphs follow on from one another clearly and coherently. Specialist vocabulary has been used appropriately throughout. Text is legible and the meaning is clear. There are few if any errors of spelling, punctuation and grammar.		
Quality of Written Communication Skills The candidate's quality of written communication skills will be one of the factors influencing the actual mark an examiner will give within a level of response. The quality of written communication skills associated with each level is indicated above		
Examples include Discrimination in selecting appropriate sources, what is appropriate, newspapers/magazines, books/ebooks, maps, DVD-ROMs, Internet etc. Need for precision in framing questions, especially the need to translate enquiries expressed in 'ordinary language' into a form that can be use by search engines. Refining search conditions use of multiple search conditions and relational operators (AND, OR, wild cards and the use of quotation marks around phrases etc. Evaluate/ensure accuracy and plausibility of the information, especially information from websites		12

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