



General Certificate of Secondary Education

Information and Communication Technology 3521H Full Course *Specification A*

3521/H Higher Tier

Mark Scheme

2009 examination - June series

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 meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting 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 candidates' 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.

Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

Copyright © 2009 AQA and its licensors. All rights reserved.

COPYRIGHT

AQA retains the copyright on all its publications. However, registered centres for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to centres to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

1	(a)	<table border="1"> <thead> <tr> <th>Device</th> <th>Input</th> <th>Output</th> <th>Storage</th> </tr> </thead> <tbody> <tr> <td>Mouse</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Hard disk drive</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Laser printer</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Microphone</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Speakers</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Touch sensitive screen</td> <td>✓</td> <td></td> <td></td> </tr> </tbody> </table>	Device	Input	Output	Storage	Mouse	✓			Hard disk drive			✓	Laser printer		✓		Microphone	✓			Speakers		✓		Touch sensitive screen	✓			Answers as in the above table	Correct answers only	5
Device	Input	Output	Storage																														
Mouse	✓																																
Hard disk drive			✓																														
Laser printer		✓																															
Microphone	✓																																
Speakers		✓																															
Touch sensitive screen	✓																																
1	(b)	<table border="0"> <tr> <td>Ink-jet printer</td> <td>dot-matrix printer</td> </tr> <tr> <td>Plotter</td> <td>actuator</td> </tr> <tr> <td>Screen (VDU)</td> <td>motor</td> </tr> <tr> <td>lights</td> <td>digital projector</td> </tr> </table>	Ink-jet printer	dot-matrix printer	Plotter	actuator	Screen (VDU)	motor	lights	digital projector		Any 1 x1	1																				
Ink-jet printer	dot-matrix printer																																
Plotter	actuator																																
Screen (VDU)	motor																																
lights	digital projector																																
1	(c)	<table border="0"> <tr> <td>CD-ROM (drive)</td> <td>floppy disk (drive)</td> </tr> <tr> <td>CD-RW (drive)</td> <td>memory stick/flash card/MP3</td> </tr> <tr> <td>DVD ROM (drive)</td> <td>pen drive/USB drive</td> </tr> <tr> <td>DVD RAM (drive)</td> <td>RAM</td> </tr> <tr> <td>ROM</td> <td></td> </tr> </table>	CD-ROM (drive)	floppy disk (drive)	CD-RW (drive)	memory stick/flash card/MP3	DVD ROM (drive)	pen drive/USB drive	DVD RAM (drive)	RAM	ROM			Any 1 x 1	1																		
CD-ROM (drive)	floppy disk (drive)																																
CD-RW (drive)	memory stick/flash card/MP3																																
DVD ROM (drive)	pen drive/USB drive																																
DVD RAM (drive)	RAM																																
ROM																																	
2	(i)	Encryption		Correct answer only	1																												
2	(ii)	Sorting files		Correct answer only	1																												
2	(iii)	Real time processing		Correct answer only	1																												
2	(iv)	Generation of master files		Correct answer only	1																												
2	(v)	File dumps (allow transaction processing)		Correct answer only	1																												

3	<p>Mark only the first four fields. Do NOT count those below, NOT "Surname, First name, Address1, Address 2, Address 3 as already given in the question. Or street, town, city etc. Ignore correct duplicate fields e.g. 3rd telephone number – these do not count in the FOUR</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 70%;">Title</td> <td>at least 3</td> </tr> <tr> <td>Postcode</td> <td>at least 7</td> </tr> <tr> <td colspan="2">(or clear 3box gap 3 box)</td> </tr> <tr> <td>Telephone number (day)</td> <td>at least 11</td> </tr> <tr> <td>Telephone number (evening)</td> <td>at least 11</td> </tr> <tr> <td>Contact tel. Number</td> <td>at least 11</td> </tr> <tr> <td>Mobile tel. Number</td> <td>at least 11</td> </tr> </table> <p style="text-align: center;">NOTE MAX TWO TELEPHONE NUMBERS</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 70%;">Fax number</td> <td>at least 11</td> </tr> <tr> <td>E-mail address</td> <td>at least 20(sensible splits)/memo</td> </tr> <tr> <td>Date of Birth</td> <td>at least 8(2-2-2/4)</td> </tr> <tr> <td>Date of registered</td> <td>at least 8(2-2-2/4)</td> </tr> <tr> <td>Favourite genre</td> <td>at least 10/list at least 3 options</td> </tr> <tr> <td>Machine owned</td> <td>at least 10</td> </tr> <tr> <td>Signature</td> <td>memo</td> </tr> <tr> <td>Photo</td> <td>suitable box</td> </tr> </table> <p>Not gender NB – could use the date at end of form Boxes only unless memo specified [] – open boxes are OK – boxes with small vertical lines are OK but dashes are NOT. Memo = lines/dashes/large box/dots IGNORE FILLING IN Tick correct field name – do not penalise lack of capitals Tick correct no. of boxes/memo field for corresponding field name. Count ticks - divide by 2 - round down MAX 4 marks</p>	Title	at least 3	Postcode	at least 7	(or clear 3box gap 3 box)		Telephone number (day)	at least 11	Telephone number (evening)	at least 11	Contact tel. Number	at least 11	Mobile tel. Number	at least 11	Fax number	at least 11	E-mail address	at least 20(sensible splits)/memo	Date of Birth	at least 8(2-2-2/4)	Date of registered	at least 8(2-2-2/4)	Favourite genre	at least 10/list at least 3 options	Machine owned	at least 10	Signature	memo	Photo	suitable box	4
Title	at least 3																															
Postcode	at least 7																															
(or clear 3box gap 3 box)																																
Telephone number (day)	at least 11																															
Telephone number (evening)	at least 11																															
Contact tel. Number	at least 11																															
Mobile tel. Number	at least 11																															
Fax number	at least 11																															
E-mail address	at least 20(sensible splits)/memo																															
Date of Birth	at least 8(2-2-2/4)																															
Date of registered	at least 8(2-2-2/4)																															
Favourite genre	at least 10/list at least 3 options																															
Machine owned	at least 10																															
Signature	memo																															
Photo	suitable box																															
4	<p>(a) Larger text Bold text Centre text</p>	Any 1 x 1 mark 1																														
4	<p>(b)</p> <ul style="list-style-type: none"> • Underline/italic • Bullet points/numbering • Text font type changed/Word art used • Coloured(text)/highlight colour • Tab <p>NB – cannot repeat any answer their answers from (a)</p>	Any 1 x 1 mark 1																														

4	(c)	<ul style="list-style-type: none"> • Picture/clipart added/graphic/logo • Drawing tools/auto shape • Tables • Font size made smaller • Text boxes • Borders/Border Art • Background – (pattern/shade/watermark)/colour • Text right justify • Change the line spacing • Template <p>Not just font by itself – or just change font. *** Cannot use any repeat answers from their answers to parts (a) or (b) in section (c) *** Can use answers from (a) or (b) in part (c) if not repeats from their answer to part (a) or (b). *** One bullet point can only score one mark.</p> <p>1 mark each for feature</p>	Any 3 x 1 mark	3
5	(a)	A	Correct answer only	1
		H	Correct answer only	1
5	(b)	E	Correct answer only	1
5	(c)	B or I	Correct answer only	1
6	(a)	Edit number scales on the axis	Correct answer only	1
		Construct bar charts from tables of data	Correct answer only	1
6	(b)	(i) Text /links to other pages / website		1
6	(b)	(ii) An area/image/symbol which provides links to other pages /website		1
6	(c)	Add/delete pages Set up styles/house styles/templates/Master page Edit/ change links /show links Allow DTP features e.g. pictures, fonts, banners, marquis, rollovers, spellchecker	Any 1 x 1 mark	1
7	(a)	Stock number	Correct answer only	1
7	(b)	(i) It has the same key field as a book already in the list / key field must be unique/ (Stock) Number has already be used for 'The End' (another record)		1
7	(b)	(ii) Set up an auto key field generated by the computer Set up a suitable data validation routine (suitable description). Set up a primary key Not verification	Any 1 x 1 mark	1
7	(c)	(i) Number in stock -3 (below zero) / cannot have a negative number in stock/ impossible value.		1
7	(c)	(ii) Data validation	Correct answer only	1
7	(d)	(i) A1013 A1024 (ignore, . space ok)	Correct answer only	1

7	(d)	(ii)	A1035	Correct answer only	1
8	(a)		Spreadsheet	Correct answer only	1
8	(b)		D11	Correct answer only	1
8	(c)		Currency		1
8	(d)		<p>=sum(D5:D13) allow D14 or D15 instead of D13 = D5+D6+D7+D8+D9+D10+D11+D12+D13 (+D14+D15) allow = sum(D5+D6+D7+D8+D9+D10+D11+D12+D13) (+D14+D15) allow = D5+D6+D7+D8+D9+D10+D11+D12+D13 (+D14+D15) allow with no = sign</p>		1
8	(e)		<p>Reduce the cost of any item/ Reduce the number bought/ Take out an item</p> <p>*****</p> <p>Check to see if the costs are now within budget/validation</p> <p>*****</p> <p>If not- continue to reduce/ process is cyclic NOT vague statements such as “change”</p>	Any 2 x 1 mark	2
9	(a)		<p>They do not have to spend money on travelling to work each day</p>	Correct answer only	1
			<p>They do not have to spend time travelling to work each day</p>	Correct answer only	1
9	(b)		<p>Work can take longer as it’s easier to be distracted from their work</p>	Correct answer only	1
			<p>They feel out of touch with those who work at head office every day</p>	Correct answer only	1
10	(a)		<p>PC – (any suitable associated hardware such as mouse/ keyboard/memory stick, external hard drive) Projector Electronic/Interactive whiteboard Speakers Screen</p>	Any 2 x 1 marks	2
10	(b)		<ul style="list-style-type: none"> • Can use sound • Can use video clips /film/animation • More interesting / grabs the audiences attention / use a range of learning styles means they remember more • Easier/quicker to back and review after questions/ at own pace • Can see what the college/facilities actually looks like in much more detail. <p>NOT just save or reuse. Not just easier to change (also apply to leaflet)</p>	Any 2 x 1 marks	2
10	(c)		<ul style="list-style-type: none"> • Students can take the leaflet away with them/ refer to later • Could be given to absent students/others not in the room • College would not have to set up hardware for presentation. • Hardware /electrical problems 	Any 1 x 1 mark	1

11	(a)	(i)	<ul style="list-style-type: none"> • Face to face discussion • Immediate feedback • Can read people / facial expressions • Ask follow up questions • High percentage response 	Any 1 x 1 mark	1
11	(a)	(ii)	<ul style="list-style-type: none"> • You can see exactly what is happening / seeing things for yourself • Employees cannot lie/ Often a more accurate picture/ gives factual information/unbiased • Can see things not thought about in advance • No time taken answering questions/does not interfere with business 	Any 1 x 1 mark	1
11	(b)	(i)	Questionnaires / surveys (not just forms) Looking at company documentation	Correct answer only	1
11	(b)	(ii)	This answer is dependant on (b) (i) Cheap to produce Cheap to administer / no need for anyone else to be present Can be filled in/ done at any time Anonymous Collect a lot of information (quickly)	Any 1 x 1 mark	1
11	(c)	(i)	Help facilities	Correct answer only	1
11	(c)	(ii)	Use of colour Use of sound Use of images / pictures / graphics Position of items on screen House style/ professional appearance /consistency of layout User friendly/easy to use/easy to navigate	Any 1 x 1 mark	1
12	(a)	(i)	Part of a record Contains one piece of information Heading for a column Any suitable example e.g. contains an item such as the surname	Any 1 x 1 mark	1
12	(a)	(ii)	Part of a file/ collection of related fields Information/fields relating to one person /member All information in a row of a database Any suitable example e.g. details about ONE member	Any 1 x 1 mark	1
12	(b)		Staff would need training	Correct answer only	1

12	(c)	<p>Faster to search/find (NOT easier) Faster to sort/sort on multiple fields Faster/easier to edit/update Takes up less space Backup data Less/No chance of losing/misplacing records on a computer Faster/neater to graph data Access from outside Sports centre Faster/more attractive generation of reports Access by several people at one time Export to other applications (mail-merge, e-mail) More secure because</p> <p>NOT easy to use</p>	<p>Any 2 x 1 mark</p>	2
13	(a)	Software	Correct answer only	1
13	(b)	<p>Manages the allocation of CPU time Manages the system security</p>	<p>Correct answer only Correct answer only</p>	<p>1 1</p>
13	(c)	<p>Real time Batch processing Multi-user Multi-access Accept Windows (XP, Vista, etc.) and Linux</p>	<p>Any 1 x 1 mark</p>	1
14	(a)	(i)	<p>Car registration number (plate) / car ID/ driving license number Vehicle Identification Number/chassis number</p>	1
14	(a)	(ii)	Customer number / customer ID	1
14	(b)	<p>Model of car Engine size</p>	<p>Correct answer only Correct answer only</p>	<p>1 1</p>
14	(c)	<p>Reduces/ faster data entry/fewer errors Reduced storage space Reduces redundancy /duplication of data i.e. saves you putting the same data in twice</p>	<p>Any 1 x 1 mark</p>	1

15 (a)

Design issues

- Meets **user needs/performance criteria** from Analysis
- **Sketch plans** showing the layout of pages/plan of site map
- Planning **contents** for (what will go on) **each page**. Such as contact details or on-line orders.
- **DTP plans (max 2)**
 - Use of **colour** – text or background
 - Suitable **image /logo**
 - **“highlight”** key words/phrases/etc.
 - **Text size, style** and contrast (readable)
 - Consider data in **tables**
- **Correct software** needed /specification/decide the **programming language** to be used
- **Consistent layout of pages/** Plans for “Corporate image” /Master page/ **House style/Style sheets**
- **Test plan/test data/expected results**
- Plans/designs for **hyperlinks/hotspots** between pages/navigation bar
- Plans/designs for use of **sound/video** clips
- Plan/designs links to **other sites/e-mail link**
- Plan/designs of **help facility**
- Consider the **number of pages** in the web site/web space available
- Consider the **browser**
- Consider the **audience/age range** of potential users
- Consider the **loading time** for a page/reduce number or size of pictures/animations
- Consider **security** needed/avoid hackers/viruses
- Design types **of validation/** description of validation techniques – e.g. range check (second mark)
- **User friendly/** clarity ease of use.

Any 4 x 1 mark

4

15 (b)

Implementation and Testing issues

- **Put on/ upload/posting** it to the Internet
- Checking the **data/website** put in is **up-to-date**
- Checking the **data/website** put in is **accurate** (proof read, spelling and grammar)
- Implementation follows design/**user needs/performance criteria**
- Creating/setting up each page/insert **hyperlinks/hotspots**
- Creating/setting up images,/ a “hit” counter
- Creating/setting up **help** facilities
- Creating/setting up **video /sound**
- Creating/setting of **on-line account/ contact details**
- Creating/setting up the **security/hacking/viruses** of the website
- Creating/setting up **validation** rules
- Creating on-line forms (various possible)
- Testing the “**test plan**” from the test plan/ Validation on input fields work
- Testing **hyperlinks and hot spots** work within the site/ testing that links to orders/other web sites work/ Testing e-mail links work
- **Customer/Consumer testing** of the site/Beta testing
- Testing **help** facility
- Testing **video/sound** work
- **Correct errors** (and retest)
- Check if it works on different platforms (not computers)/ browser/resolution
- Testing on-line forms (various possible)

Any 4 x 1 mark

4