AQA
ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Secondary Education

Information and Communication Technology 3522 Full Course
Specification B

3522/H   Higher Tier

Mark Scheme

2007 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.

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3522/H
GCSE Information and Communication Technology Specification B (Full Course)

1	(a)		These points. peter.jones@schoolsnet.ngfl.uk pqr@manch.biz.net	2 marks
1	(b)		These points. When you reply to an e-mail, the e-mail is automatically addressed to the person who sent it to you When you forward an e-mail, you have to enter the address of the person you are sending it to	2 marks
1	(c)		Any reasonable, for example. A new e-mail message opens, 1m The e-mail is automatically addressed, 1m A signature is automatically put in the message, 1m The hyperlink changes colour, 1m	2 marks
1	(d)	(i)	This point. A digital photograph	1 mark
1	(d)	(ii)	Any reasonable, for example: A word processed document A program A spreadsheet A slide show A web page An audio file A video file A virus NOT: a digital photograph or equivalent	2 marks
1	(e)		This point. The file is compressed	1 mark
1	(f)		Any reasonable, for example. To make sure the file size is smaller, or, otherwise the email would be too big The file is sent and received faster You can attach more files to an e-mail Some ISPs restrict the size of attachments or too large to send NOT in order to compress the file unless qualified, for example: to compress the file and make it smaller	2 marks

1   (g)   Any reasonable, for example: 3 marks
                Yours truly, etc.
                Sender's name
                The address of the sender's Web site
                The sender's address
                The sender's telephone number
                NOT A hand written signature

                                                          Total   15 marks

2	(a)		These points. A number; A picture	2 marks
2	(b)		This point. B5	1 mark
2	(c)		This point. =E5-C6+D6	1 mark
2	(d)		This point. E8 Allow +E7-C8+D8 Could be in any order; each term should have the sign shown except a + sign can be omitted on the LH term Allow +E8-C9+D9 Could be in any order; each term should have the sign shown except a + sign can be omitted on the LH term Ignore = sign at left hand first character	1 mark
2	(e)	(i)	These points. Modelling future spending Displaying the balance carried forward each month of the year in a graph	2 marks
2	(e)	(ii)	Any reasonable task. Must be realistic. For example: Calculating mortgage repayments Validating data Creating macros NOT Modelling future spending Displaying the balance carried forward each month of the year in a graph	1 mark
2	(f)		These points. In the spreadsheet, highlight cell D7 and copy, 1m In the word processor, place the cursor at the insertion point and paste, 1m	2 marks

2	(g)		Any reasonable reasons why this may not be secure, for example:
			   1. It's easy to lose a flash memory stick
			   2. If the flash memory stick is lost someone else could read the statement.
			NOT:
			   There's no password on it
			
			Any reasonable corresponding way to make the statement more secure, for example:
			   1. Use a lanyard or otherwise secure the flash memory stick or make a backup
			   2. Put a password on the file or flash memory stick
			NOT:
			Don't save it on a memory stick
			Use another type of backing storage
				4 marks

2	(h)	This point.	1 mark
		15 Kilobytes	

Total 15 marks

| 3 | (a) | | This point. | 1 mark |
| | | | A subscription to an ISP (Internet Service Provider) | |

| 3 | (b) | | This point. | 1 mark |
| | | | http://www.pqrest.com | |

| 3 | (c) | (i) | This point. | 1 mark |
| | | | A description of what subjects students can study at school | |

3   (c)   (ii)   Any reasonable, for example.   **2 marks**
Contact details
Photographs of the school
A welcome message from the headteacher
Learning resources
NOT A description of what subjects students can study at school

3   (c)   (iii)   Any reasonable, for example: **2 marks**
Parents, Ofsted inspectors, governors
Allow: teacher and students only if qualified, for example,
prospective teacher, prospective student, a teacher from another
school.
NOT investors

3   (d)   Any reasonable, for example.   **3 marks**
Purchase price
Cost of ownership
Type of connection to the computer
Resolution
Ability to scan different sizes of image and film strips
Compatibility with the computer
User manual available
Allow: Ability to copy and print images when the computer is
turned off
NOT: if it's working properly; the physical size of the scanner

3   (e)   These points.   **2 marks**
Uses a search engine or goes to an on line shop, 1m
Enters key words, 1m
Follows a directory structure, 1m
Looks at returned search list, 1m

3   (f)   Any reasonable, for example.   **3 marks**
The student may not have a bank or credit card
The student might have to wait for the scanner to be delivered
The scanner may not arrive
The wrong scanner may be delivered
The carrier may try to deliver when the student is at school and take
the scanner back to the depot
The depot might be so far away the student cannot collect the
scanner in a reasonable travelling time
The student may have to pay for postage or packaging
Personal details collected may be misused

NOT There is no one to ask for help

Total   15 marks

| 4 | (a) | (i) | This point. | 1 mark |

Term	Label
(i) Icon	A

| 4 | (a) | (ii) | This point. | 1 mark |

Term	Label
(ii) Menu	D

| 4 | (b) | | These points.
The pointer changes shape when it has been clicked over an icon to show that a program is loading
The pointer may be a different shape over different parts of a window | 2 marks |

| 4 | (c) | | These points.
Within 'My Music' there should be one folder for each different artist, 1m
Within the folder for an artist, there should be one folder for each album, 1m
These points could be made by drawing a diagram or by describing the hierarchical folder structure or by giving a pathname, etc. | 2 marks |

| 4 | (d) | (i) | These points.
The music files take up one gigabyte on the computer's hard disk so they would not fit on a CD
The music fan wants to play the music files on another computer | 2 marks |

| 4 | (d) | (ii) | Any reasonable, for example.
A backup copy is needed
The music fan wants to play music on a different DVD player
NOT
The music files take up one gigabyte on the computer's hard disk so they would not fit on a CD
The music fan wants to play the music files on another computer | 1 mark |

| 4 | (e) | (i) | Any reasonable, for example.
A PDA is a mobile device
To listen to music away from the computer | 1 mark |

| 4 | (e) | (ii) | Any reasonable, for example.
A PDA is much larger and heavier than a flash memory stick
You can use a flash memory stick on most computers by plugging it in the USB port but a PDA will need Bluetooth/WiFi enabled or a cable. | 1 mark |

| 4 | (f) | (i) | Any reasonable, for example.
The CD collection might take up a lot of storage space
The CD collection is no longer needed as the computer can be used to play music | 2 marks |

| 4 | (f) | (ii) | This point.
If the CDs are sold, the copyright permission to play them goes with the CD | 1 mark |

4   (f)   (iii)   Any reasonable, for example.   1 mark
                    Legacy equipment may not play mp3 files
                    The CD collection is a more attractive way to store music
                    It's easier for others to browse the CD collection than the music
                    files on the computer
                    NOT
                    If the CDs are sold, the copyright permission to play them goes with
                    the CD

Total   15 marks

| 5 | (a) | (i) | This point. | 1 mark |

Term	Label
(i) Feasibility study	D

| 5 | (a) | (ii) | This point. | 1 mark |

Term	Label
(ii) Systems analysis and design	B

| 5 | (b) | | These points.
Talk to other ICT specialists who have written ICT systems for doctors' surgeries
Talk to employees of doctors' surgeries and find out what they do | 2 marks |

| 5 | (c) | | These points.
Some doctors have handwriting that is difficult to read
Some drugs have names which are difficult to spell and these could be checked using a spelling checker
There may only be one copy of a handwritten prescription. If a word processor is used, it is easier to store a record of what has been prescribed | 3 marks |

| 5 | (d) | (i) | These points.
Correct topology (line/bus or star, not ring), including at least three networked computers and a file server (allow: CPU, main computer; NOT LAN), 1m
Networked hardware: e.g. printer or printer server, scanner, hub, wireless access point, etc., 1 each, max 2m
Local hardware: printer, scanner, etc., 1 each, max 2m
Connection to other networks, 1m | 4 marks |

| 5 | (d) | (ii) | Any reasonable, for example.
You can share networked hardware.
Sharing hardware is cheaper per person so you may be able to buy faster or better quality
You can share data files
You can communicate with other users by e-mail, etc. | 1 mark |

| 5 | (e) | (i) | Any reasonable advantage, for example.
Doctors can connect to the wireless LAN from any location in the surgery but there must be a fixed access point in the room to connect to a cabled LAN
A wireless LAN is easier to install than a cabled LAN as there is less cabling | 2 marks |

| 5 | (e) | (ii) | Any reasonable disadvantage, for example.
Patients' details are less secure as it may be possible to connect to the wireless LAN in the street outside the surgery
Making a connection to a wireless LAN may be more difficult than plugging a cable into a fixed access point on a cabled LAN
Transmission speeds on a wireless LAN are likely to be slower than on a cabled LAN | 1 mark |

Total 15 marks

6	(a)		These points. Beam B is broken before beam A if a boat is leaving, 1m Beam A is broken before beam B if a boat is entering, 1m	2 marks
6	(b)		These points. When a boat enters the harbour, the computer adds 1 to the total When a boat leaves the harbour, the computer subtracts 1 from the total	2 marks
6	(c)		Any reasonable reason, 1m + any reasonable way of improving the design, 1m For example. Two boats have entered or left at the same time side by side or in opposite directions, 1m + restrict the harbour entrance so it is only possible for one boat at a time to pass through whatever its direction, 1m A flock of seagulls has flown across the harbour mouth and broken both beams, 1m + use bird scarers, 1m or + adjust the software to discriminate between birds and boats, 1m	4 marks
6	(d)		Any reasonable, for example. So that only those people who should use the computer can use it So that the system can't be altered maliciously	1 mark
6	(e)	(i)	Any reasonable, for example. To deny access to someone who has found out a valid username and password but should not be using the computer	1 mark
6	(e)	(ii)	These points. Correct label in box, 1 each Correct pattern is B 1 each, max 4m CE A	4 marks
6	(f)		Any reasonable, for example. Bullet points could be used to emphasis each step A larger font would make the documentation more readable	1 mark

Total 15 marks

7	(a)		This point. Bar Code Number Allow: Bar or Code or Number, individually or any two, and allow misspellings	1 mark
7	(b)	(i)	These points. Baked Beans Allow Baked or Beans	1 mark
7	(b)	(ii)	This point. Chilli Sauce Allow Sauce but NOT Chilli	1 mark
7	(b)	(iii)	These points. Both: Chilli Peppers and Baked Beans Allow (Peppers – NOT Chilli) and (Baked or Beans)	1 mark
7	(c)		This point. **Quantity in Stock** is less than the **Minimum Stock Level** or equivalent	1 mark
7	(d)		These points. The bar code won't scan, 1m A human can read the numbers but not the bar code, 1m	2 marks
7	(e)		These points. When the check digit was re-calculated it was not the same as the check digit scanned The bar code was not found in the database The bar code has been damaged	3 marks
7	(f)		These points. CBEAD, 3m Starts with C and ends with D, 1m BE in order ignoring other labels, 1m	3 marks
7	(g)		These points. Checkouts are not required by RFID as the computer automatically scans the contents of your supermarket trolley and charges the cost to your bank account. When you return to the supermarket, the computer reads the RFID tags in your clothing so it can direct you to similar items you might want to buy.	2 marks

Total 15 marks

8	(a)		These points. Look at the layout of the streets and gardens in a residential neighbourhood Look at shape of the United Kingdom and Europe	2 marks
8	(b)	(i)	These points. Satellite pictures are low resolution and they are not clear enough to identify individuals SeeEarth is not an interactive, real time system	2 marks
8	(b)	(ii)	Any reasonable, for example. Cameras on satellites cannot see everywhere inside buildings NOT Satellite pictures are low resolution and they are not clear enough to identify individuals SeeEarth is not an interactive, real time system	1 mark
8	(c)		These points. The location of petrol stations The location of schools The route taken by public transport	3 marks
8	(d)		Any reasonable, for example.	7 marks

8 (d) continued:

User: Council, max 1m per user, max 4 users
What they could do: Plan new housing estates, 1m, max 2m per user
Advantage:
The new housing estate can be planned to fit in with existing communities, 1m, max 2m per user
Disadvantage:
Services not previously mapped on layers may not be taken into account in planning, e.g. older sewers, 1m, max 2m per user

User: The police
What they could do: Plan patrols
Advantage: Layers showing where crimes were committed and at what time could help police schedule patrols where and when they would be most effective
Disadvantage: Areas with low incidences of crime could be ignored, 1m

Award marks for User and (what they could do or advantage or disadvantage) independently.
Terrorists can see the layout of the grounds of public buildings they want to attack, 2m
Burglars can see the most secluded route into a house, 2m

If the user is too vague for a mark, award marks for (what they could do or advantage or disadvantage). For example.
Some people believe that the layout of their house and garden is private information and should not be publicly available,

disadvantage 1m

Do not allow answers which are conceptually the same even if there is a clear distinction between the groups causing the disadvantage.
For example:
Burglars can see the most secluded route into a house (2m) and bank robbers can see the most secluded route into a bank (conceptually the same, 0m).

NOT answers to 8(a) to (c)

Total   15 marks