AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Secondary Education

Information and Communication Technology 3521 Full Course
Specification A

3521/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.

1	(a)	mouse	**1 mark**	**Correct answer only**
		scanner	**1 mark**	**Correct answer only**

	(b)	monitor	**1 mark**	**Correct answer only**
		colour laser printer	**1 mark**	**Correct answer only**

	(c)	Local Area Network (close variation but clearly correct)		**1 mark**
		e.g. local area network /local area network		

	(d)	Reduces costs as users can share peripherals		
			1 mark	**Correct answer only**
		Users can share centrally stored files with details of houses		
			1 mark	**Correct answer only**

2   (a)   **Testing**
- A series of <u>checks/tests</u> to make sure the system(implied) is <u>working </u>as expected

Both underlined parts for **1 mark**

NOT test the plan

(b)   **Test Plan**
- A detailed <u>list of the tests</u> to be carried out to check/test the <u>system</u>

Both underlined parts for **1 mark**

(c)   **Typical data**
- A piece of <u>normal</u> data/type of data that the system will accept/data expected to be input
- A well explained <u>example</u> (e.g. exam mark 0-100 any value >0 & <100)

Either underlined part for **1 mark**

(d)   **Extreme data**
- A piece of <u>borderline</u> data that the system will just accept
- A well explained <u>example</u> (e.g. exam mark 0-100 0 or 100)

Either underlined part for **1 mark**

(e)   **Erroneous data**
- A piece of <u>unacceptable/wrong/incorrect/outside boundaries</u> data that the system will not accept
- A well explained <u>example</u> (e.g. exam mark 0-100 any value -10, 110 etc.)
- Doesn't comply with the validation rule

Either underlined part for **1 mark**

3	(a)	spreadsheet	**1 mark**	**Correct answer only**
	(b)	D12 (close variation but clearly correct)		**1 mark**
	(c)	= D8-D21	**1 mark**	**Correct answer only**
	(d)	number/numeric/integer (close variation but clearly correct)		**1 mark**
	(e)	A virus may corrupt the information	**1 mark**	**Correct answer only**

4   (a)   (i)   sending the order to the supermarket from their PC

                                        1 mark   **Correct answer only**

        (ii)   the supermarket taking the money from their credit card

                                          1 mark   **Correct answer only**

        (iii)   a van from the supermarket delivering them to their house

                                        1 mark   **Correct answer only**

    (b)

Advantages
- Cheaper/quicker in the long run because……..
  - Saves lots of their time travelling there and doing the shopping
  - Saves money on petrol and putting mileage on the car/ bus fare
- Do not have to leave the house/ order from comfort of their home
- Can order them 24/7 not just when the supermarket is open
- Use repeat orders to save time
- Wider choice
- Faster to search (on-line)
- Home delivery

NOT just cheaper or faster   **Any 2 x 1 mark**

    (c)

Disadvantages
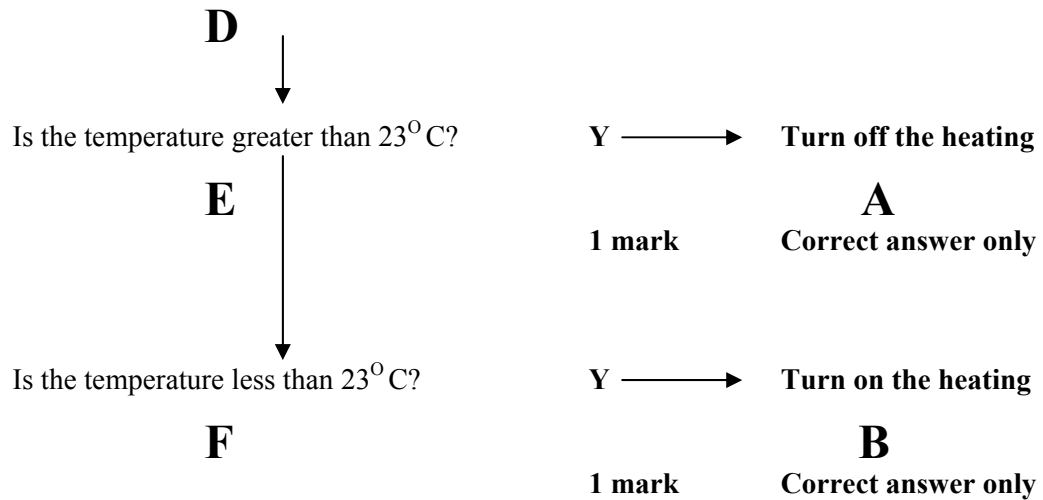- Not feel a personal service/ cannot choose own groceries/ cannot see what you're getting/damaged
- Virus issues/Hacking issues
- Fear of buying due to credit card security would cut sales/fraud
- Not everyone has access to/knows how to use Internet/computers /network down.
- Arrives late/ does not arrive /wrong goods delivered/ have to wait for goods

                                              1 mark

5 (a) Read the temperature in the room   **1 mark**   **Correct answer only**

D

Is the temperature greater than 23° C?   **Y** ⟶ **Turn off the heating**

E   **A**

                                                    1 mark   **Correct answer only**

Is the temperature less than 23° C?   **Y** ⟶ **Turn on the heating**

F   **B**

                                                    1 mark   **Correct answer only**

NB – stages 2 and 3 are interchangeable

(b)   Heat sensor/thermistor/thermostat/temperature sensor   **1 mark**
             (not just sensor or thermometer)

(c)   The temperature in each room may well be different   /size of rooms may affect the
             temperature   **1 mark**

(d)   Every hour   **1 mark**   **Correct answer only**

6 (a)   Importing images   **1 mark**   **Correct answer only**
             Freehand drawing   **1 mark**   **Correct answer only**

   (b)   (close variation for these but clearly correct)
             Scanner
             Graphics tablet/digitiser
             Light pen (NOT laser pen)
             Joystick
             Tracker ball   **1 mark**

   (c) (i) Colour Laser printer
             Colour inkjet printer   **Either of these two answers only 1 mark**

        (ii) Save the artwork onto <u>CD-ROM or pen drive or similar (NOT floppy disk)</u>
                                                                         1 mark
             Send it <u>by post/courier/hand deliver</u>   **1 mark**
             OR
             Create <u>file</u> as an <u>attachment</u>/attach image   **1 mark**
             Send it by <u>e-mail</u>/ over **internet**   **1 mark**

   (d)   Graphics files are large   **1 mark**   **Correct answer only**

7 (a)

- <u>Sending</u> a <u>text message/attachment/file/picture</u>
- Over a communications network/LAN/WAN/Internet /WAP phone/between computers

NOT just electronic-mail   **1 mark**

Either bullet point can score the mark

  (b) (i) The e-mail will usually arrive quicker than the post

          1 mark   **Correct answer only**

      (ii) **Advantage compared with post**

- Same delivery time anywhere in the world
- Free/cheaper to send than paying postage/send attachments at no extra cost.
- Less chance of getting lost
- Send to many people at the same time
- Send when ready/immediately (not when post is collected)
- Check e-mails from many places (World wide)
- Don't have to leave the house to send it.

NOT – does not need the receiver to be there   **1 mark**

      (iii) **Disadvantage compared with post**

- Problems with computers are more common
- Catch/send virus
- Can't send parcel/bulky items
- Need a computer/Internet/WAP phone etc.

          1 mark

8 (a)   Menu driven   **1 mark**   **Correct answer only**

  (b)   Consistency of layout   **1 mark**   **Correct answer only**

  (c)   (use of)colour
(use of) sound
(use of) images/pictures/graphics
position of items on screen/easy to navigate
help facilities
house style/user friendly
      NOT easy to use.   **Any 2 x 1 mark**

9 (a)   Checking of data on/when input
by software
to see if it is reasonable/sensible/follows the rules (NOT correct)
Sensible example scores 1 mark   **Any 2 x 1 mark**

  (b) (i) <u>Carr Susan's</u> left blank/no entry (in reg group)   **1 mark**

      (ii) Presence   **1 mark**   **Correct answer only**

  (c) (i) Mark for Afsal Nasir is 104 this is greater than 100/mark too large   **1 mark**

      (ii) Range check   **1 mark**   **Correct answer only**

	(d)		Not unique/pupils could have the same name	**1 mark**	
10	(a)	(i)	The driver would not be in any danger using a simulator		
				1 mark	**Correct answer only**
			Road and weather conditions on the simulator can be changed as needed		
				1 mark	**Correct answer only**
		(ii)	The distance taken to stop will vary with weather conditions		
				1 mark	**Correct answer only**
	(b)		Spreadsheet	**1 mark**	**Correct answer only**
	(c)		Changing a variable or variables within the model		
			Looking at/analysing the results of these changes		
			Make decisions/predictions/more changes as a result of the analysis/what if…/goalseeker		
			The process is often cyclic/repeated	**Any 2 x 1 mark**	

(All answer maybe by means of an example)

11	(a)	(i)	Immediate feedback of information	**1 mark**	**Correct answer only**
		(ii)	Questionnaires are often not completed	**1 mark**	**Correct answer only**
		(iii)	Can see what is actually happening/not subjective Can watch "it" a number of times No prone to staff exaggeration/lies		
				1 mark	
	(b)	(i)	Design ("2nd stage")	**1 mark**	**Correct answer only**
		(ii)	Evaluation ("5th/last stage")	**1 mark**	**Correct answer only**
		(iii)	Testing ("4th stage")	**1 mark**	**Correct answer only**
12	(a)		Information must not be excessive for the purpose		
				1 mark	**Correct answer only**
			Information must not be transferred to countries outside the European Union		
				1 mark	**Correct answer only**
			Information must be obtained fairly/lawfully		
				1 mark	**Correct answer only**
	(b)	(i)	5	**1 mark**	**Correct answer only**
		(ii)	ID Number		**1 mark**
		(iii)	A key field must be unique in a database table	**1 mark**	**Correct answer only**

(c)   Video/film/products/stock table
Supplier table
Orders/rentals/sales table   **1 mark**

(d)   Avoids duplication of data/redundant data within tables
Less data entry so less time and less likely to make errors
Can produce report/select fields/take fields from each/more than one of the tables of the
each of the tables   **1 mark**

13   (a)   **1 mark is to be given for each relevant issue.**

Health issues
Back/Neck pain/problems
Headaches
Eye strain
Wrist problems/Carpel Tunnel Syndrome/RSI(finger problems)
Possible radiation from monitor
Possible epilepsy from monitor
Overheating of the room

Safety issues
Trailing wires
Electrical faults
Overload sockets/supply   **Any 5 x 1 mark**

(b)   **Max 1 mark for each issue – no matter how well it is expanded – Max 4 marks**

Health issues
Regular breaks/walk around/relaxation techniques/fresh air
Correctly adjusted chair/back support correct in chair/footrest
Adjust monitor distance/brightness
Visit doctor/eye test
Use wrist support/ergonomically designed keyboard
Check radiation level/change type of monitor/possible "screen shield"
Use of air conditioning/ventilation

Safety issues
Make sure all leads are secure/out of reach
Repair faults/report faults
Regular service and checks/PAT tests
Use of blinds/fluorescent diffusers
Install additional sockets
                                                            Any 4 x 1 mark