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

2008 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.
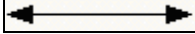
Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

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

3 pt ▬▬▬▬▬

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

▬ ▬ ▬

| 1 | (a) | (iii) | This point | 1 mark |

◀▬▬▬▶

| 1 | (b) | | This point | 1 mark |

Centred

| 1 | (c) | | Any reasonable | 2 marks |

Locate the cursor in the paragraph to be indented + Select 'increase indent button in the toolbar' – must distinguish between increase and decrease indent, 1+1

Locate the cursor in the paragraph to be indented + in the ruler drag the indent tab, 1+1

Highlight the paragraph to be indented + press the tab key, 1+1

NOT use the tab key by itself

NOT use the space bar

| 1 | (d) | | These points | 2 marks |

Portrait is clearly identified, 1m

Landscape is clearly identified, 1m

| 1 | (e) | (i) | Any reasonable, for example | 2 marks |

Pick the new colour + flood using the fill with colour tool, 1+1m

Highlight the logo + change the font colour, 1+1m

| 1 | (e) | (ii) | Any reasonable, for example | 2 marks |

Select the object + drag a handle, 1+1m

Highlight the text + choose a larger font, 1+1m

| 1 | (e) | (iii) | Any reasonable, for example | 3 marks |

Copy or cut the logo, 1m

+ (paste & reposition), 1m

+ repeat (paste & reposition), 1m

NOT: tile

Total 15 marks

2	(a)	(i)	This point One of: B, D, E	1 mark
2	(a)	(ii)	Any reasonable, for example Microphone, webcam Allow: camera	1 mark
2	(b)	(i)	This point One of: A, C	1 mark
2	(b)	(ii)	Any reasonable, for example Speakers	1 mark
2	(c)	(i)	This point One of: H, I, L	1 mark
2	(c)	(ii)	Any reasonable, for example Floppy disk, CD drive	1 mark
2	(d)	(i)	This point J	1 mark
2	(d)	(ii)	This point K	1 mark
2	(e)		Any reasonable, for example Upgrade the contract with the ISP so the broadband speed is increased Increase the amount of RAM memory Upgrade the device with the slowest transmission speed of: the Wireless Access Point, router or modem Get rid of malicious programs that can slow down Internet access, e.g. spyware NOT: Use a virus scanner, etc. without qualification NOT: Do not allow other computers to access the Internet – not practical in context NOT: Move nearer to the wireless access point – not practical in context	2 marks
2	(f)		These points The file myletter.doc is saved in a folder called 'Friends' The file myletter.doc is likely to be a word processor document The full path name is unique on the desktop computer	3 marks
2	(g)	(i)	Any reasonable similarity, for example Both can store data, programs and files Both are likely to be installed in the processor box	1 mark
2	(g)	(ii)	Any reasonable difference, for example RAM memory is cleared when the computer is turned off but files saved on the hard disk will be available next time the computer is turned on The HD has a bigger storage capacity than RAM	1 mark

Total 15 marks

3	(a)	(i)	This point A formula – allow misspellings	1 mark
3	(a)	(ii)	This point Currency – allow misspellings	1 mark
3	(b)		These points Format is sum(x:x), ignore = on LHS, 1m Range is D4:D8, D3:D8, D4:D9 or D3:D9 – ignore the colon or separator, 1m D4+D5+D6+D7+D8, ignore = on LHS, 1m	2 marks
3	(c)	(i)	These points D6, D10, 1m each	2 marks
3	(c)	(ii)	Any reasonable The cells contain a formulae, 1m The formulae refer to the cell that has been edited, 1m	2 marks
3	(d)	(i)	This point Pie – allow misspellings	1 mark
3	(d)	(ii)	This point It is easy to see which equipment sold the largest quantity	1 mark
3	(e)	(i)	This point Bar (or Column) – allow misspellings	1 mark
3	(e)	(ii)	This point It is easy to see the approximate sales value of each item of equipment	1 mark
3	(f)		Any reasonable, for example All the data cannot be seen as one column is blocking out another Some of the labels are missing The scale used does not clearly show the quantity sold There is no title on the graph Its difficult to read off the exact value of the bar heights	3 marks

Total 15 marks

| 4 | (a) | (i) | This point
Record – allow misspellings | 1 mark |

| 4 | (a) | (ii) | This point
Field – allow misspellings | 1 mark |

| 4 | (b) | | Any reasonable, for example
Telephone Number, 1m
Date of birth – NOT age, 1m
Address, 1m
Gender, 1m
NOT: name, full name, first name | 2 marks |

| 4 | (c) | (i) | These points
MemberNumber is the key field
The value of the key field must be unique | 2 marks |

| 4 | (c) | (ii) | Any reasonable
Not 2015, 0365, 0112, 8231
Must be four digits long | 1 mark |

4   (d)   These points   2 marks
Correct descending order – ignore misspelling, 2m

Name
Milner
Jowett
Hassini
Flanagan
Afzal

Four in descending order ignoring any one name not in order, 1m
For example,
    MHJFA has the J and H transposed
    Either cross out J leaving four in descending order: MHFA
    Or cross out H leaving four in descending order: MJFA
Correct ascending order, AFHJM, 1m

| 4 | (e) | (i) | Any reasonable, for example
Using a keyboard, 1m
Using OCR, 1m
Using OMR, 1m
Accept:
You can type it in, 1m
You can scan it, 1m | 2 marks |

| 4 | (e) | (ii) | These points
Title or explanation of reason for collecting data or explains how to fill in form or entry, 1m max
Asks for Name and Instrument, 1m
Asks for other reasonable field e.g. telephone number, date of birth, address, e-mail address, gender, experience, 1m
NOT: Age
Uses character boxes, 1m | 4 marks |

Uses tick boxes, 1m
Uses any other method that facilitates input to a computer, 1m
Questionnaire is signed and dated, 1m

| | | | **Total** | 15 marks |

5	(a)	Any reasonable, for example Close the windows Turn the heater on	1 mark
5	(b)	These points The best temperature for plant growth The best humidity for plant growth	2 marks
5	(c)	Any reasonable, for example The temperature in the greenhouse The humidity in the greenhouse	1 mark
5	(d) (i)	This point Sensors – allow misspellings	1 mark
5	(d) (ii)	This point Actuators – allow misspellings	1 mark
5	(e)	These points Description is in context, 1m Sensing and reaction, 1m Feedback is cyclical, 1m	3 marks

5 (f) Any reasonable advantage to the garden centre, for example — 4 marks (max 3 adv and 3 disadv)
The growing conditions are always the best
The greenhouse is monitored all day every day
There is less wastage of water and heating than with manual systems
Fewer employees are needed and this reduces the cost of wages

Any reasonable disadvantage to the garden centre, for example
Set up costs are high
There may be other important factors in plant growth, such as shade, that the computer cannot control in this set up.
Fewer people are employed which may reduce the garden centre's capability to respond to unusual events, such as a very large number of customers
Someone else will be needed to look after the plants if the computer breaks down

5 (g) Any reasonable, for example — 2 marks
The computer checks if all sensors and actuators are working, 1m
The computer sets off an alarm in the garden centre office if there is a breakdown, 1m

| | | | **Total** | 15 marks |

6	(a)	(i)	This point One person enters the data from the questionnaire; another person enters the data from the same questionnaire; the computer checks that both people have entered the same data	1 mark
6	(a)	(ii)	Any reasonable, for example The person entering the data looks to see that what is written on the questionnaire is the same as the data displayed on the screen	1 mark
6	(a)	(iii)	This point To make sure that the data entered into the computer is the same as the data on the questionnaire NOT: To make sure the data is correct	1 mark
6	(b)	(i)	These points Enter the number 12 and this is rejected Enter the number 0 and this is accepted	2 marks
6	(b)	(ii)	Any reasonable, for example 0 to 10 accepted, others rejected, for example 4, accepted; 10 accepted; 11 rejected; -3 rejected; 1m NOT an answer from (b)i, that is, answers testing B, -6, 15, 12, 0	1 mark
6	(c)	(i)	These points =10+36+0+35+48+0+8+3+0+3; at least 4 correct, 1m =143, 1m; Do not allow follow through from previous step 13 remainder 0, 1m; Allow correct follow through from previous step CORRECT, 1m; Allow correct follow through from previous step	4 marks
6	(c)	(ii)	These points The same ISBN number will have the same check digit The computer recalculates the check digit when an ISBN is input to see if a mistake has been made typing it in Different ISBN numbers can have the same check digit	3marks
6	(d)	(i)	This point The computer has been switched on at the processor box	1 mark
6	(d)	(ii)	Any reasonable, for example The screen has been switched on All the cables are firmly plugged into the correct sockets	1 mark

Total 15 marks

7   (a)   Any reasonable   3 marks
                All instructions in correct syntax, 1m
                Correct sequence in 6 instructions, e.g. F2 L90 F2 R90 U3 Push, 3m
                Correct sequence in more than 6 instructions, 2m
                If not a correct sequence then max 2m
                L90 followed by R90, 1m
                Uses F2 twice only, 1m
                U3 followed by Push, 1m

7   (b)   These points   3 marks
                All instructions in correct syntax, 1m
                Arrives at 2nd shelf at B and pulls, in any number of instructions, 1m
                Moves from the 2nd shelf at B to the 4th shelf at E and pushes, in any number of
                instructions, 1m
                A correct sequence in more than 11 instructions, 2m max
                A correct sequence in 11 instructions, 3m max, for example
                        F2 L90 F3 R90 U2 Pull
                        R90 F3 L90 (U3 or U5) Push

7   (c)   (i)   Any reasonable, for example   1 mark
                F2 L90 F3 (L90 This instruction should be R90) U5 Push
                Because the fork lift is facing in the wrong direction

7   (c)   (ii) Any reasonable, for example   1 mark
                It is dumped on the floor of the warehouse

7   (d)   Any reasonable advantage for the warehouse owner, for example   7 marks
                Computer controlled fork lift trucks can work 24/7
                Down time due to breakdown is likely to cost less than employees' absence,
                sickness and welfare

                Any reasonable disadvantage for the warehouse owner, for example
                Computer controlled fork lift trucks will be more expensive to buy and set up to
                work in the warehouse than those operated by people
                Computer controlled fork lifts cannot respond to unusual situations as flexibly
                as people
                Truck always obeys instructions even if these are incorrect, so goods may get
                put in the wrong bays

                Any reasonable advantage for employees, for example
                Less risk of accident as the need for people to stack high shelves is reduced
                The job might be cleaner for the remaining employees as the jobs that are left
                are mainly office jobs
                More highly skilled workers needed so pay increases

                Any reasonable disadvantage for employees, for example
                There are fewer jobs in the warehouse
                Fewer workers needed so pay reduced
                Warehouse workers will need ICT skills
                Truck always may not respond to obstructions so employees may be injured
                People in other warehouses may have to work longer for less money to compete
                with warehouses that use computer controlled fork lift trucks

Any reasonable advantage for customers, for example
More efficient working practices can lead to reduced prices
Goods may be handled more carefully so there is less damage
Faster to handle goods so less waiting

Any reasonable disadvantage for customers, for example
A power cut or breakdown could be more widespread and lead to unavailability
of products

Total   15 marks

8	(a)	(i)	These points Employees are quickly deskilled A large quantity of old ICT hardware needs to be disposed of	2 marks
8	(a)	(ii)	Any reasonable not given in a)i., for example Old software may not be able to process files produced by new software	1 mark
8	(b)	(i)	These points Regularly retrain employees Plan spending to allow for regular replacement of hardware and software	2 marks
8	(b)	(ii)	Any reasonable not give in b)i., for example Refurbish or re-cycle old ICT hardware Pilot new technology before its introduced to ensure it benefits the business	1 mark
8	(c)		Any reasonable advantage, for example They avoid the stress or over stimulation or health problems characteristic of exposure to modern, high speed ICT and media They can concentrate on the important things in life and are not distracted by technology or trivial media content Members and their children are protected from inappropriate content on the Internet Any reasonable disadvantage, for example They do not know what is going on in the modern world It is harder/slower to communicate with people outside the group if e-mail/chat/telephone/fax is not used Many jobs require ICT skills so its more difficult to get a job	3 marks max 2 adv and 2 disadv

8   (d)   Any reasonable advantage, for example   6 marks
Children can develop the skills needed to modernise their own country
Children can use educational software which will help them learn
ICT hardware (NOT: Software) is used for longer before it is thrown out
Disposing of unwanted hardware by charitable donation costs the business less
than paying for recycling
Commitment of business to recycling, etc. may attract customers
Allow: Developing countries get free software

Any reasonable disadvantage, for example
The ICT hardware may not be useable because schools in developing countries
may not have an adequate electricity supply
Money spent on transporting old ICT hardware may be better spent on
providing a clean water supply
ICT skills may not be useful to children in developing countries as there are few
local jobs that require these skills
Developing countries may not have the facilities to recycle old computer
hardware
Hardware and software may have a resale value which is forfeited if these are
given away
Transporting old computers to developing countries is in itself polluting
NOT: The developing countries might not know how to use the computers and
have to pay for training

                                                                              Total   15 marks