AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Secondary Education

Information and Communication Technology
Specification A
3521/H Full Course Tier H

Mark Scheme
2006 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) graphics digitiser   concept Keyboard   MICR
        keyboard   scanner   OCR
        light Pen   digital camera   OMR
        mouse   joystick   bar code reader
        sensor   graphics tablet
        touch screens/pad
        interactive whiteboard

                                    Any 3 x 1   **3 marks**

   (b) laser printer   ink-jet printer   dot-matrix printer
        Plotter   actuator   (Digital) projector
        Screen (VDU)/monitor   motor
        Speaker   lights

        Allow printer for 1 mark

        Allow more than 1 type of printer   **Any 3 x 1**   **3 marks**

        Printer plus say laser printer (or ink-jet printer) only scores 1 mark

   (c) CD-ROM   floppy disk
        DVD ROM   pen drive/USB/memory stick
        DVD Ram   MP3 player
        hard disk   ROM
        RAM   **Any 2 x 1**   **2 marks**

        Drive on end – fine   **Just CD scores 0**   **CD drive scores 1**

   (d) **Sending** a text / **message** / attachment / file / picture
                                                              1 mark
        Over a (**communications) network electronically**

        LAN/WAN/Internet/WAP phone   **1 mark**

2	(a)	(i)	Analysis	**Correct answer only**	**1 mark**
		(ii)	Design	**Correct answer only**	**1 mark**
		(iii)	Implementation	**Correct answer only**	**1 mark**
		(iv)	Testing	**Correct answer only**	**1 mark**
		(v)	Analysis	**Correct answer only**	**1 mark**
		(vi)	Design	**Correct answer only**	**1 mark**
		(vii)	Design	**Correct answer only**	**1 mark**
		(viii)	Evaluation	**Correct answer only**	**1 mark**
		(ix)	Analysis	**Correct answer only**	**1 mark**
		(x)	Evaluation	**Correct answer only**	**1 mark**

(b)

- Using the data
- From a Test Plan
- Data used should be typical / extreme / erroneous
- The predicted/expected results/outcomes (from the test plan)
- Compared with the actual results (from the test plan)
- Modifications are made **if needed**

An example could score three marks

          Any 3 x 1 mark   **3 marks**

3   (a)   D12   **Correct answer only   1 mark**

       (b) (i) **Any from**
A2, A6, A12
B1,B3,B4,B6,B7,B8,B9,B10,B12,B13,B14,B15,B16,B18
C1
D1, D20
E1

                                          Any 1 x 1mark   1 mark

              (ii) **C2**   **Correct answer only   1 mark**

                   C3   **Correct answer only   1 mark**

       (c)   **=SUM(E2:E18)**   **Correct answer only   1 mark**

                  =SUM(E2:E19)   **Correct answer only   1 mark**

       (d) (i) **C18**   **Correct answer only   1 mark**

              (ii) **E18**   **Correct answer only   1 mark**

                   E20   **Correct answer only   1 mark**

       (e)   Faster **to** edit/change/alter/amend
Neater/easier **to** edit/change/alter/amend
Changes are automatically recalculated in totals.
Time saved using replicate/copy down/fill down
Validation advantages
More accurate/fewer errors (only DTP if related to errors)
Re-useable
NOT faster/quicker/neater/easier alone
                                        Any 2 x 1 mark   2 marks

       (f)   Creating the model
- Decide on a **total** takings needed for next night/week/month/year
- Change figure(s) in spreadsheet
  - Raise/lower/add/delete ………………any value
- Compare results with predicted/ "total needed"/goal seek/'what if'
- If model works / model as expected – stop

OR **general use for budgeting**
- If model not as expected – go back to…. Changes

e.g. to work out how much profit he makes   **1 mark**

                                        Any 3 x 1 mark   3 marks

4　(a)　Temperature/heat/thermistor/thermocouple

Correct answer only　　　　　**1 mark**

　　(b)　Data logging　　　　　**Correct answer only**　　　　**1 mark**

Ignore capitals – or no double g

　　(c)　If one sensor is broken/faulty – still get readings (or idea of broken)
average reading
One sensor may be in shade or direct sunlight at a given time, giving a "false reading"

Any 1 x 1 mark　　　　　**1 mark**

　　(d)　**Human comfort for employees** – could be cold, raining outside, spoil meal times, unsociable hours, safer etc
More Accurate readings – (e.g. reads to more decimal places)
Cheaper (with reason) – save on wages etc.
Consistent - Same results 24/7
More frequent/continuous readings
Temperature could be taken in several locations at once
Fewer (human) errors made

Any 2 x 1 mark　　　　　**2 marks**

　　(e)　Allows the readings to be **compared**　　　　**1 mark**
So the readings are accurate/correct

NB – it's important that the answer gets over the idea that measurement is always relative **UNLESS/UNTIL** it can be compared with other reading when both have been calibrated against the same known/standardised accepted scale.

NOT READ THE SAME.

5　　　　• 　Supervises the programs whilst they are running (alerts you when a program doesn't respond/shuts down non responsive programs)
　　　　• 　Provides start up instructions (boot up)
　　　　• 　Handling interrupts/allocates CPU time
　　　　• 　Share resources between different tasks/users
　　　　• 　Reporting on errors/Error handling
　　　　• 　Dealing with system passwords/security (NOT files)
　　　　• 　Handling input/output
　　　　• 　Allocation of storage space.
　　　　　　NOT preventing viruses

Any 4 x 1 mark　　　　　**4 marks**

6   (a)   (i)   **Mistake**
M1 - Product code PC047 has a price of 9,999 min 9999
M2 – Number in stock field text instead of number
                                min Number in stock field text
                                          any 1 x 1mark

Reason
R1 - Outside of an acceptable range
R1 - Too high when compared to the others
R2 – A field set up to take numbers should be number NOT text
Numbers are left aligned
                                      any 1 x 1mark

        (ii)   Data validation used to check data is reasonable/sensible
Data validation checks data on input so errors reduced
Example of range check/input mask/type check (ie up to 3 digits)
                              Any 2 x 1 mark   **2 marks**

  (b)   (i)   It takes less time to enter data
                            Correct answer only   **1 mark**

             It takes up less time storage space
                            Correct answer only   **1 mark**

        (ii)   Codes maybe confusing/not understood/forgotten
Codes may not be universal
                            Any 1 x 1 mark   **1 mark**

  (c)   (i)   Product ID   **Correct answer only**   **1 mark**

        (ii)   **Unique** identifier
NOT 'the most important field'

                                        1 mark

  (d)   (i)   PC040   **Correct answer only**   **1 mark**

        (ii)   **either order with or without comma**
PC046 ,   AMD 3000   **Correct answer only**   **1 mark**

PC048 ,   Pentium 4   **Correct answer only**   **1 mark**

Spaces/no spaces between is fine
After the first answer, any other words/comments – no 2nd mark

6   (e)   List Product ID, Price of each(£)
                            Correct answer only   **1 mark**

             For Price of each (£) greater than (or equals) 298/299
                            Correct answer only   **1 mark**

             And Price of each (£) Less than (or equals) 500/499
                            Correct answer only   **1 mark**
(Either order for lines 2 and 3)

7   (a)   Availability of help   **Correct answer only**   **1 mark**

               Consistency of layout   **Correct answer only**   **1 mark**

               Use of colour and sound   **Correct answer only**   **1 mark**

     (b)   Don't need to remember the "commands" needed
Keyboard/typing often not needed
Often "language free" /uses icons rather than words/intuitive
Can customise

                                     Any 2 x 1 mark   **2 marks**

     (c)   Command (line)   **Correct answer only**   **1 mark**

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

8   (a)   **any advantage to either shop or customer**

         Advantages to the shop -
- o   Fewer staff to pay
- o   No fancy shop to pay for
- o   Cheaper to advertise from Web page
- Faster to …..
  - o   E-mail customers rather than mail them about….
- Create an e-business
- Shorter hours become possible
- Sales at any time of the day 24/7
- Can deal with more people at the same time
- Wider market
- Less shoplifting

         Advantages to the customer
- Cheaper because company overheads reduced (any named one)
- Can order 24/7
- Can order without leaving the house
- Wider range of products (i.e. US or Japanese versions)
- No transport costs
- Quickly search for items they want
- Common items saved

         NOT home delivery
         NOT environmental issue
         24/7 sales/orders can only score 2 if clearly qualified for customer and shop

(b) **Disadvantages to shop**
- Local people might not know you are there
- Staff can waste time just surfing the net
- Access/ISP can cost money
- Virus issues (1)
- Hacking issues / fraud
- May cause unemployment – **leading to redundancy payments** - must be clear this applies to the shops
- Fear of buying due to credit card security would cut sales
- Not everyone has access to Internet/computers
- Cost implications of running on-line shop – training/staff/consultancy
- Internet problems/system failure – prevent shop operating

Disadvantages to the customer

- Slower to get goods, rather than getting it from a local shop
- Goods may be faulty when they arrive or it's slower to get replacement.
- Danger of fraud/hacking credit card details given on-line/identity theft
- Restricted access if computer broken/no computer or internet access
- Harder to check the reliability of the company, rather than a local store.
- Not feel a personal service
- Loss or damage in transit
- Need to have credit/debit card/paypal account
- Cant try out/see goods
- Danger of viruses (1)

Hacking/fraud, viruses, internet accessibility can only score 2 if clearly qualified for customer and shop