Version 1.0: 0605

ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Information and Communication Technology 3521
Specification A

3521/H Full Course (Higher Tier)

Mark Scheme

2005 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.

Notes for Examiners

✓	correct
✗	wrong
R	repeat
BOD	benefit of doubt
NS	not sufficient
max	maximum mark reached

Subtotals in margin, totals at end of question – transfer to front of paper
Cross out any unanswered question space and blank pages

Questions requiring answers to be ticked should be marked as follows:
More than one tick on a line then mark wrong (0)
If more than the permitted number of choices ticked in a list then mark up to the permitted number

1	**Storage**	**Correct Answer only**	**1 mark**
	Input	**Correct Answer only**	**1 mark**
	Storage	**Correct Answer only**	**1 mark**
	Input	**Correct Answer only**	**1 mark**
	Output	**Correct Answer only**	**1 mark**
	Input	**Correct Answer only**	**1 mark**
	Output	**Correct Answer only**	**1 mark**
	Input	**Correct Answer only**	**1 mark**
	Output	**Correct Answer only**	**1 mark**

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Please make sure you do not count the first tick (exemplar)

More than one tick along a row (0)

Total 9 marks

2 (a) It is cheaper as printers can be shared **Correct answer only (1)**

Data can be quickly and easily transferred between computers **Correct Answer Only (1)**

Users can communicate directly with each other **Correct answer only (1)**

(b) Problems with server/serve breaks down effects all other computers
Viruses pass (quickly) from machine to machine
Increased security problems (other peoples files)
Increased installation costs (not just more expensive)
"Big brother" watching you issues
NOT hardware has to be maintained Not printer queue
Any 1 x 1 mark (1)

(c) Wide Area Network **Correct Answer only (1)**

(d) **Wide Area Network - usually** **Local Area Network - usually**
Town/world wide room/building wide/site
Uses comms to connect connects with wires
NOT candidate just repeating the 'local area' or 'wide area'

Any 2 x 1 mark **(2)**

Total 7 marks

3 (a) **C6** **Correct answer only** **1 mark**
More than 1 tick in the list mark the first one

(b) **(i) Currency** **Correct answer only** **1 mark**

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

(iii) Formula **Correct answer only** **1 mark**

Ignore spelling errors

(c) Time can be saved by replication of formulae **CAO** **1 mark**
Changes are automatically re-calculated in totals **CAO** **1 mark**

(d) Access time
Power cut
Virus
Hacking
Cost of buying the software
Computer crash/Hardware or software problems stop access to the spreadsheet
Training needed/ some people cannot use computers
Not buying computer

Any 1 **1 mark**

NOT disadvantages that apply to calculators
(e.g. may get deleted, not easily transported around)

Total 7 marks

4.Ignore any leading OPEN
Accept CLOSE for 1 mark even the command(s) are wrong
Part A

DOWN 3	**Correct answer only**	**1 mark**
CLOSE	**Correct answer only**	**1 mark**

Mark independently
(CLOSE ends this section)

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Part B – look for

UP 3	**Correct answer only**	**1 mark**
RIGHT 14	**Correct answer only**	**1 mark**

DOWN 4

OPEN	**Correct answer only**	**1 mark**

UP 4

LEFT 14	**Correct answer only**	**1 mark**

NB – stop at first ERROR
Ignore obvious spelling errors, incorrect case and spacing
If all along one line then accept (e.g. DOWN 3 CLOSE, etc)
Allow labelled instructions

Deduct 1 mark for use of consistent abbreviations throughout (e.g. RT – RIGHT)
Deduct 1 mark for use of units (e.g. cm or units)
OR deduct one mark for repeat of whole instruction
Max deduct is 1 mark
SPECIAL CASE

Part B could contain a version that works not using the commands from the list.

This will be given either 2 marks for totally correct or 0 marks

AND stop at first mistake as before (wrong move)

5	(i) sensor	**Correct answer only**	**1 mark**
	(ii) data logging	**Correct answer only**	**1 mark**
	(iii) period of logging	**Correct answer only**	**1 mark**
	(iv) logging interval	**Correct answer only**	**1 mark**
	(v) calibrate	**Correct answer only**	**1 mark**
	(vi) feedback	**Correct answer only**	**1 mark**

Total 6 marks

Ignore spelling. If swapped over mark the "swaps"

6

(i) a field or key field		**1 mark**
(ii) compression	**Correct answer only**	**1 mark**
(iii) encryption	**Correct answer only**	**1 mark**
(iv) a password	**Correct answer only**	**1 mark**
(v) a virus	**Correct answer only**	**1 mark**
(vi) transaction file	**Correct answer only**	**1 mark**

Total 6 marks

7 (a) A **Correct answer only** **1 mark**
D **Correct answer only** **1 mark**
E **Correct answer only** **1 mark**
(accept these in any order)

(b) **Any additional tasks**
Scans each user in set sequence (may be round robin)
Allocates user time/resource allocation in set sequence

Allow other operating system routines.

- Organise/manage/supervises the programs whilst they are running
- Provides start up instructions (boot up)
- Handling interrupts
- Share resources (between different tasks)
- Reporting on errors/Error handling
- Dealing with passwords/security (e.g. user Ids, levels of access)
- Allocation of storage space.

No repeats of A-F
NOT Communication between hardware and software, BIOS (0)

Any 1 x 1 mark **1 mark**

(c) **Any additional tasks**
Appears to be working on more than one task/program at once

Allow other operating system routines.

- Organise/manage/supervises the programs whilst they are running
- Provides start up instructions (boot up)
- Handling interrupts
- Share resources (between different tasks)
- Reporting on errors/Error handling
- Dealing with passwords/security (e.g. user Ids, levels of access)
- Allocation of storage space.

No repeats of A-F
NOT Communication between hardware and software, BIOS (0)

Any 1 x 1 mark **1 mark**

Total 5 marks

8. (a) Product Code **Correct answer only** **1 mark**

(b) Checking of data **on input** (before processing)
by software
to make sure it is sensible/reasonable/rules to which data must abide – **not correct**
Allow one example of data validation (e.g. range check) 1 mark

Any 2 x 1 mark **2 marks**

Please make sure you do not count the first tick (exemplar)

If two or more ticks on a line then (0)

(c)	Accept	**Correct answer only**	**1 mark**
	Reject	**Correct answer only**	**1 mark**
	Reject	**Correct answer only**	**1 mark**
	Accept	**Correct answer only**	**1 mark**
	Accept	**Correct answer only**	**1 mark**

ARRAA

(d) Details of how to install the database	**Correct answer only**	**1 mark**
Trouble shooting guide	**Correct answer only**	**1 mark**

Total 10 marks

9 (a) Allow two DPA responsibilities on the same line and mark up to the first three altogether

- Process data fairly/lawfully
- Obtain data fairly/lawfully
- Destroy data when no longer needed/not kept longer than needed
- Keep data secure (against /loss/damage/unlawful processing)
- Only use for registered purpose
- Allow customers to see data on request/ process within the rights of the data subjects.
- Keep up-to-date/accurate/correct
- Data must not be excessive for the purpose/Data relevant for purpose
- Data must not be transferred to countries outside EEC

Any 3 x 1 mark

Mark first three if more than one in a section **3 marks**

(b)

- Right to see the data about themselves/be given a copy
- Right to have wrong data corrected/deleted (*must be in **passive voice***)
- Right to seek compensation for damage caused by inaccurate data
- Prevent the processing if it is likely to cause damage or distress
- Prevent data being used for direct marketing
- Prevent automatic decisions being made on the basis of data held
- Make a request to the Data Protection commissioner if Act contravened

Any 2 x 1 mark **2 marks**

Mark first two if more than one in a section

Total 5 marks

10 (a)

(i) Group of (related) fields
Part of a file (or made up of a number of fields)
Information relating to one person
One row in a database (table)
NOT reference to spreadsheet
Examples are OK **1 mark**

(ii) Part of a record
Containing one data item
Smallest part of a file
Column heading/title in a database
Examples are OK **1 mark**

(b) Faster to search (NOT easier)
Faster to sort/sort on multiple fields
Faster/easier to edit/update
Takes up less space
Backup data
Less 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
More secure because …….

NOT easy to use (0)
Any 2 x 1 mark each **2 marks**

(c) The staff may need training to use the computers **CAO** **1 mark**

There is a potential danger from hackers **CAO** **1 mark**
Mark first two in the list

(d) Postcode/zip code
Members ID
DOB
E-mail address
Type of membership/membership fee
Gender/Sex
Medical details/Health problems
Photo
Date of membership/expiry
Sport/activity they usually do
Fax number
Title
NOT NI or doctor's name/address, age, height, weight, induction check
NOT other phone numbers
Any 3 x 1 mark **3 mark**
Total 9 marks

11 Design issues

- Meets user needs
- Sketch plans showing the layout of pages/plan of site map
- Planning what will go on each page
- 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
- Software specification/decide the programming language to be used
- Consistent layout of pages/ Plans for "Corporate image"
- Test plan/test data
- Plans/designs for hyperlinks between pages/navigation bar
- Plans/designs for use of sound/video clips
- Plan/designs links to other sites
- Plan/designs e-mail link
- Plan/designs for ordering pizzas
- 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
- Design types of validation
- Description of validation techniques – e.g. range check (second mark)

Needs a little more than "user friendly"

Implementation issues

- posting it to the internet
- checking the data put in is up to date/(allow details of Pizza etc. to be put in)
- checking the data put in is accurate (proof read, spelling and grammar)
- follows design/user needs
- setting up each page/insert hyperlinks, images,/setting up a "hit" counter
- setting up the security of the website
- setting up validation rules

Testing Issues

- Testing the "test plan"
- Testing hyperlinks and hot spots work within the site
- Customer/Consumer testing of the site/Beta testing
- Testing that links to orders/other web sites work
- Testing e-mail links work
- Testing help facility
- Validation on input fields work
- Correct errors (and retest)
- Whole system testing/check if it works on different platforms (not computers)

Tick each point D/DTP for Design. I for Implementation. T for Testing
Record subtotals for each section at the bottom of the answers (e.g. D-6, I-2, T-2)Any 1 X 10.
Min of 1 from each section. i.e. could be 8,1,1 for 10

Total 10 marks