OCR
RECOGNISING ACHIEVEMENT

GCSE

Information & Communication Technology A

General Certificate of Secondary Education **GCSE 1994**

General Certificate of Secondary Education (Short Course) **GCSE 1094**

Mark Scheme for the Units

January 2009

1994/1094/MS/R/09J

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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2357/01 Paper 1 (Foundation)

1

edit a video file **format disks** **look at web pages**

scan a photograph **send emails**

[2]

2 Ticks as shown:

Item	Hardware (✓)	Software (✓)
Web browser		**(✓)**
Central Processing Unit	✓	
Digital camera	✓	
Mouse	✓	
Operating System		✓
Spreadsheet		✓

[5]

3 Answers as shown in the table.

Task	Most suitable software application
Working out the costs of a school trip	***One from:*** • spreadsheet • calculator
Organising student details in a school	Database (management system)
Editing digital images	***One from:*** • Graphics (package) • Photo editor (software) • Animation (package) • Scanner software
Creating leaflet	***One from:*** • DTP/Desktop Publishing (Package) • Word processor

[4]

4 **(a)**
- joystick
- microphone

[2]

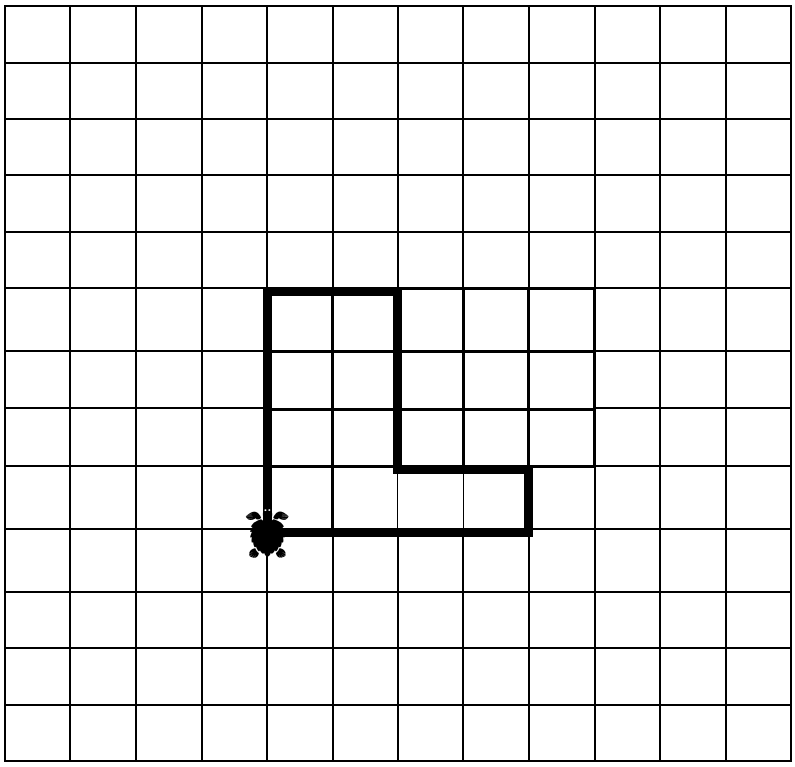
(b)
- printer
- robot arm

[2]

(c) ***One from:***
- monitor/screen/VDU/TFT/LCD panel
- speaker(s)/headphones

[1]

5 (a)



Mark drawing as follows:

An elbow is two correct lines with the correct turn between. There are five possible elbows.

one correct elbow – 1 mark
two correct elbows – 2 marks
all correct – 3 marks

[3]

(b) C

[1]

6 Two from:

- copyright (infringement)
- against the law/criminal offence/illegal
- do not own the files
- royalties not paid

[2]

7 Ticks as shown.

Task	Data Logging (✓)
Calculating the cost of phone calls	
Changing traffic lights	
Counting how many people go through a turnstile at a concert	✓
Counting the number of cars leaving a car park	✓
Printing personalised wage slips	
Recording the temperature of the water in a fish tank	✓

[3]

8 **(a)** home (page).

[1]

(b) **(i)** (hyper)link

[1]

(ii) **Two from:**

- server off-line/down
- connection broken/server overload
- hardware failure/modem could be broken
- page/site deleted/moved/missing/being maintained
- page renamed
- (hyper)link broken/wrong/error/changed
- virus problem
- site blocked

[2]

(c) **Four from:**

- Add images/picture/graphics
  …to encourage visitors to stay.
  …to illustrate the goods for sale.
- Add video clips/animations
  …to illustrate the content.
- Add sounds
  …to illustrate the content.
- Add pop-ups
  …to advertise etc
- Use tables/frames
  …to separate information.
- Add colours
  …to enhance the appearance.
- Use different fonts
  …to enhance the page visually.

[4]

9 Ticks as shown.

Device	(✓)
A door bell	
An automatic light in a fridge	
An automatic washing machine	✓
A DVD recorder	✓
A school weather station	

[2]

10 **(a)** **(i)** The two operators are:

- AND
- >

[2]

(ii) Two/2

[1]

(b) Five/5

[1]

(c) ***Two from:***

- telephone numbers have spaces
- telephone numbers have **leading** zeros
- no need to do calculations on telephone numbers
- no need to sort telephone numbers
- telephone numbers can start with a +

[2]

(d) **(i)**

- Whole
- number/numeric

Give **two** marks for: integer

[2]

(ii) ***One from:***

- no decimal places needed
- takes up less space in the data file
- takes less processing time in the database
- original data is (whole) numbers
- field only accepts numbers

[1]

(e) ***One from:***

- unique
- will all be different
- other fields contain data that could be the same.

[1]

(f) ***One from:***

- (the contents are) confidential
- (the contents are) sensitive information
- (the contents are) subject to the Data Protection Act
- (the contents) should not be seen/altered by unauthorised persons

[1]

(g) ***Two from:***

- find contact details (in case of an emergency/complaint/incident)
- search for details eg absence
- sort group into Male and Female
- print/produce lists
- use mail merge (to write letters)

Accept suitable alternative solutions that use only the fields shown in the database.

[2]

11 ***Four from:***

- use a backup
- to restore his files
- keep previous versions/use different file names
- to recover (part of) the work
- keep hard copies to retype/photocopy
- suitable back up medium, eg removable hard disk/network drive/memory stick/DVD/CD
- stored separately/separate folder/web storage/email
- regular/automatic backups
- retrieve from recycle bin/use software to undelete files

[4]

12 (a) ***Three from:***

- email may be intercepted/accessed by unauthorised persons
  - o use encryption/passwords on documents
- email may not be delivered/be lost
  - o ask for read/return receipt
- recipients have to ask to receive their email
  - o set up automatic email requesting
- viruses may be attached to emails
  - o use anti-virus software
- original/legal documents cannot be sent
  - o no immediate solution
  - o send originals by email and send signed copies back by post.
- email may be corrupted
  - o resend the email
- attachments may be too large
  - o change email provider/use webmail
  - o use compression software
  - o subdivide attachments
- could be sent to junk folder
  - o flag as not junk
  - o add sender address to address book

[6]

(b) ***Two from:***

- no need to travel/can work from home/can work from anywhere there is a connection
- time saved on travel
- cost saved on travel
- no need to collect all delegates together
- easier to call a meeting at short notice
- reduce costs of facilities/overnight expenses
- electronic records can be kept

[2]

Total marks: [60]

2357/02 Paper 1 (Higher)

1 Four from:

- Add images/pictures/graphics
  …to encourage visitors to stay
  …to illustrate the goods for sale.
- Add video clips/animations
  …to illustrate the content.
- Add sounds
  …to illustrate the content.
- Add pop-ups
  …to advertise etc.
- Use tables/frames
  …to separate information.
- Add colours
  …to enhance the appearance.
- Use different fonts
  …to enhance the page visually. **[4]**

2 Ticks as shown.

Device	(✓)
A door bell	
An automatic light in a fridge	
An automatic washing machine	✓
A DVD recorder	✓
A school weather station	

[2]

3 (a) (i) The two operators are:

- AND
- > **[2]**

(ii) Two/2 **[1]**

(b) Five/5 **[1]**

(c) **Two from:**
- telephone numbers have spaces
- telephone numbers have **leading** zeros
- no need to do calculations on telephone numbers
- no need to sort telephone numbers
- telephone numbers can start with a + **[2]**

(d) (i)
- Whole
- Number/numeric

Give **two** marks for: integer **[2]**

(ii) **One from:**
- no decimal places needed
- takes up less space in the data file
- takes less processing time in the database
- original data is (whole) numbers
- field only accepts numbers **[1]**

(e) **One from:**
- unique
- will all be different
- other fields contain data that could be the same. **[1]**

(f) **One from:**
- (the contents are) confidential
- (the contents are) sensitive information
- (the contents are) subject to the Data Protection Act
- (the contents) should not be seen/altered by unauthorised persons **[1]**

(g) **Two from:**
- find contact details (in case of an emergency/complaint/incident)
- search for details eg absence
- sort group into Male and Female
- print/produce lists
- use mail merge (to write letters)

Accept suitable alternative solutions that use only the fields shown in the database. **[2]**

4 Four from:

- use a backup
- to restore his files
- keep previous versions/use different file names
- to recover (part of) the work
- keep hard copies to retype/photocopy
- suitable back up medium, eg removable hard disk/network drive/memory stick/DVD/CD
- stored separately/separate folder/web storage/email
- regular/automatic backups
- retrieve from recycle bin/use software to undelete files **[4]**

5 (a) Three from:

- email may be intercepted/accessed by unauthorised persons
  - o use encryption/passwords on documents
- email may not be delivered/be lost
  - o ask for read/return receipt
- recipients have to ask to receive their email
  - o set up automatic email requesting
- viruses may be attached to emails
  - o use anti-virus software
- original/legal documents cannot be sent
  - o no immediate solution
  - o send originals by email and send signed copies back by post.
- email may be corrupted
  - o resend the email
- attachments may be too large
  - o change email provider/use webmail
  - o use compression software
  - o subdivide attachments
- could be sent to junk folder
  - o flag as not junk
  - o add sender address to address book **[6]**

(b) Two from:

- no need to travel/can work from home/can work from anywhere there is a connection
- time saved on travel
- cost saved on travel
- no need to collect all delegates together
- easier to call a meeting at short notice
- reduce costs of facilities/overnight expenses
- electronic records can be kept **[2]**

6 (i) Four from:

- use of sensors mentioned
- two (or more) named sensors, eg, light, pH, temperature
- sensors placed before and after factory
- sensors placed at different depths
- via data logger/interface box
- ADC
- take readings regularly
- storage of data on computer
- backup of data
- transmission of data to another computer system for analysis
- store in suitable format (for export)

[4]

(ii) Four from:

- export from the data logging software
- export to analytical software/spreadsheet/database
- format onto tables/charts/graphs
- use of formulae/functions
- perform calculations eg average/differences
- perform 'what-if'
- perform 'goal seek'
- make predictions
- add titles/legends/labels

[4]

7 Four from:

- load images
- select area from one image.
- cut/copy/crop area.
- resize area.
- paste area into other image.
- use of layers.
- blur/merge edges.
- use of transparency.
- correct faults/error.

[4]

8 (i) Validation

One from:

- checks against rules
- to find errors on the source document

Two from:

- that the data is reasonable/sensible
- check data within limits/range check
- check data is of the correct data type/type check
- format check eg dd/mm/yy
- length check/check data has set number of characters
- presence check/check data is entered
- existence check/check that the data exists

[3]

(ii) Verification

Three from:

- to check that the data has been copied correctly/to eliminate typing/transcription errors
- visual check…
- comparing two versions
- double entry

[3]

9 Six from:

Benefits of using the internet as the only source of information include:

- vast information available on a topic
- information is available from around the world/not restricted to local resources
- can cross-check (a large number of) sources of information for accuracy
- information is more likely to be up-to-date than alternatives eg books, CD-ROMs, newspapers
- can easily/quickly/accurately extract materials/information/text/images for use in own research
- can contact authors of information easily/quickly
- using trusted sites provides accurate information

Drawbacks of using the internet as the only source of information include:

- vast information makes finding useful information slow/difficult
- search engines favour/show advertisers' sites in preference to others so information is not presented in order of importance
- web search results can be influenced by code/HTML/header tags to produce false/misleading results
- information may not be exactly what is required
- large quantity of information is difficult to sift through
- information may be inaccurate/difficult to check the accuracy of the information
- information may be biased
- information may be unsuitable/inappropriate/offensive/racist/pornographic/drug-related etc
- information may be politically sensitive/subversive
- unable to check accuracy against written/hard copy alternatives/reference materials/information may be false
- may be unable to verify the source/author of the materials
- copyright of the materials may be unclear/unsure who has the copyright of the materials/plagiarism
- some original/archive material cannot be viewed first hand

Maximum 4 marks for all benefits or all drawbacks.
Up to one mark for a reasoned conclusion. **[6]**

10 Five from:

- using menus to provide a choice of routes through the presentation/to allow user to interact with the presentation
- using (timed) transitions to display a succession of images/show images in sequence
- using (timed/on mouse click) transitions to display a text/information sequence
- using captions/text/annotations to describe the images/illustrations
- using text features (eg bold, italic, colours, size, moving, bulleted) to enhance the text appearance/draw attention to text
- change of background colour/highlight text/images/information to add variety
- using animations/video sequences to illustrate/show facts/topics
- use of links to web pages for additional information
- use of links to full-screen video sequences to show additional information/external source video
- use of audio/sounds/voiceovers to add commentary/background noises to presentation
- using interactive touch screen features to move objects on screen

Candidates must give both the feature and a use to score the mark. **[5]**

TOTAL 60 MARKS

2359/01 Paper 3 (Foundation)

<table>
<tr><th>Q</th><th>Mark Scheme</th><th>Marks</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>1</td><td>
<table>
<tr><th>Statement</th><th>True (✓)</th><th>False (✓)</th></tr>
<tr><td>A CAD package is used to create a database</td><td></td><td>✓</td></tr>
<tr><td>A graphics tablet is an output device</td><td></td><td>✓</td></tr>
<tr><td>A spreadsheet is used to control a patient's temperature in hospital</td><td></td><td>✓</td></tr>
<tr><td>A web browser is used to view pages on the Internet</td><td>✓</td><td></td></tr>
<tr><td>A word processor is used to produce letters</td><td>✓</td><td></td></tr>
</table>
</td><td>[5]</td></tr>
<tr><td>2</td><td>DVD floppy disk keyboard
Plotter printer scanner</td><td>[2]</td></tr>
<tr><td>3</td><td>
<table>
<tr><th>Task</th><th>Data collection method</th></tr>
<tr><td>choose from a set of options at a POS terminal</td><td>Bar-code reader</td></tr>
<tr><td>input data from bank cheques</td><td>MICR</td></tr>
<tr><td>input multiple-choice responses from an exam paper</td><td>OCR</td></tr>
<tr><td>read data from the label of a tin of fruit</td><td>OMR</td></tr>
<tr><td>scan text for use in a word processor</td><td>Touch screen</td></tr>
</table>
</td><td>[5]</td></tr>
</table>

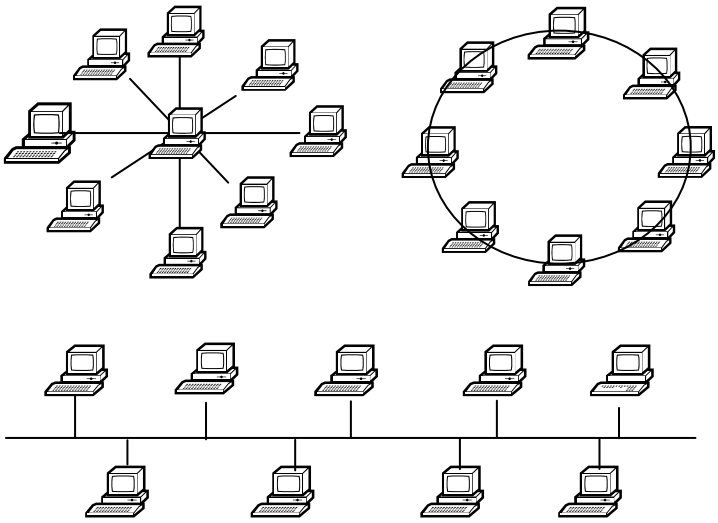
<table>
<tr><th>Q</th><th>Mark Scheme</th><th>Marks</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>4</td><td>
<table>
<tr><th>Task</th><th>Analysis (✓)</th><th>Design (✓)</th></tr>
<tr><td>Choosing any validation or verification required</td><td></td><td>✓</td></tr>
<tr><td>Identifying the problem</td><td>✓</td><td></td></tr>
<tr><td>Outlining the user requirements</td><td>✓</td><td></td></tr>
<tr><td>Specifying report layouts for the new system</td><td></td><td>✓</td></tr>
</table>
</td><td>[4]</td></tr>
<tr><td>5</td><td>
<table>
<tr><td></td><td>✓</td></tr>
<tr><td>A computerised theatre booking system</td><td>✓</td></tr>
<tr><td>Printing payslips</td><td></td></tr>
<tr><td>Processing cheques at a bank</td><td></td></tr>
<tr><td>Processing electricity bills</td><td></td></tr>
<tr><td>Purchasing an item at a POS terminal</td><td>✓</td></tr>
<tr><td>Withdrawing money from an ATM</td><td>✓</td></tr>
</table>
</td><td>[3]</td></tr>
<tr><td>6</td><td>The Computer Misuse Act.....makes the spreading of viruses illegal.

A firewall.....prevents unauthorised access to computer systems.

The Data Protection Act……allows you to look at any data that an organisation might be keeping about you.

Encryption…….changes data so that it is unintelligible to unauthorised users.

Buying on the internet……has caused some high street shops to close.</td><td>[5]</td></tr>
<tr><td>7</td><td>(i) One from:
• Magnetic stripe reader
• Barcode reader/barcode scanner</td><td>[1]</td></tr>
<tr><td>7</td><td>(ii) Two from:
• It is a quicker method of entering data
• It is a more accurate method of entering data</td><td>[2]</td></tr>
</table>

<table>
<tr><th>Q</th><th>Mark Scheme</th><th>Marks</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>8</td><td>(a)
  </td><td>[3]</td></tr>
<tr><td>8</td><td>(b) • Server/hub/switch</td><td>[1]</td></tr>
<tr><td>9</td><td>Two from:
• Car fault diagnosis
• Tax systems
• Plant/animal identification
• Chess/card games
• Mineral prospecting
• Assessing insurance risk</td><td>[2]</td></tr>
<tr><td>10</td><td>
<table>
<tr><th>Statement</th><th>True (✓)</th><th>False (✓)</th></tr>
<tr><td>A check digit checks how many digits there are in a number</td><td></td><td>✓</td></tr>
<tr><td>A length check is used to limit the number of characters entered</td><td>✓</td><td></td></tr>
<tr><td>A range check prevents numbers outside a range being entered</td><td>✓</td><td></td></tr>
<tr><td>An invalid character check makes sure names are correct</td><td></td><td>✓</td></tr>
</table>
</td><td>[4]</td></tr>
</table>

<table>
<tr><th>Q</th><th>Mark Scheme</th><th>Marks</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>11</td><td>
<table>
<tr><td></td><td>(✓)</td></tr>
<tr><td>Documentation of the system is not required.</td><td></td></tr>
<tr><td>It is easier to modify the system and still produce the payroll.</td><td>✓</td></tr>
<tr><td>Not all workers will need training. They can learn as they go along.</td><td>✓</td></tr>
<tr><td>Their total wage bill will be lower.</td><td></td></tr>
<tr><td>There is no delay before the new system is fully operative.</td><td></td></tr>
<tr><td>They still have the manual system to use if the new system fails</td><td>✓</td></tr>
</table>
</td><td>[3]</td></tr>
<tr><td>12</td><td>Two from:
• RAM is random access memory and ROM is read only memory
• RAM is volatile/ROM is non volatile/RAM loses contents when switched off/ROM does not lose data when switched off/RAM stores data temporarily
• Data cannot be changed on ROM/data can be changed in RAM
• Data cannot be written to ROM/data is fixed at manufacture
One mark for use of RAM, one mark for use of ROM
• RAM holds the data the user is currently working on.
• ROM holds BIOS/ games programs</td><td>[4]</td></tr>
<tr><td>13</td><td>(a) Four from:
• have been made redundant
• have had to retrain
• moved to a different job
• deskilled
• work shorter hours
• less social contact with other workers
• cleaner working environment
• less dangerous jobs
• some have had to relocate</td><td>[4]</td></tr>
<tr><td></td><td>(b) Two from:
eg
• fitting wheels to the car
• spraying car bodies
• connecting the wiring
• welding parts together
• fitting windscreens
• drilling holes
• assembling car parts
• lifting/moving parts</td><td>[2]</td></tr>
</table>

Q	Mark Scheme	Marks
13	**(c) One from:** **Advantage** • Don't have to pay robots • Robots produce more **consistent** accuracy of work • Robots don't take breaks/work continuously • Robots don't go on strike • Production lines do not need to be made safe for humans **One from:** **Disadvantage** • Initial cost of robots expensive • Cannot adapt to new situations/can only perform one task • Have to be reprogrammed for new tasks • If there is an error will continue regardless unless human intervention • Cost of maintenance/repair	**[2]**
14	**Two from:** • Fewer errors made… / **more** accurate • Nobody is left out… • The data is automatically entered from the database • Less to type • Quicker than typing (individual) **personalised** letters • Members **prefer** personalised letters • Gives the club a more professional appearance	**[2]**
15	**Normal** • Normal data is data which is within acceptable limits/valid • Any exam mark between 0 and 60 would be normal data, eg. 56 **Abnormal** • Abnormal data is data outside acceptable limits • Any exam mark greater than 60 or less than 0 is abnormal or text eg. "sixty" **Extreme** • Extreme data is data on the boundaries of acceptable limits • Exam marks of 0 or 60 would be extreme data	**[6]**

2359/02 Paper 3 (Higher)

<table>
<tr><th>Q</th><th>Mark Scheme</th><th>Marks</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>1</td><td>
<table>
<tr><th>Statement</th><th>True (✓)</th><th>False (✓)</th></tr>
<tr><td>A check digit checks how many digits there are in a number</td><td></td><td>✓</td></tr>
<tr><td>A length check is used to limit the number of characters entered</td><td>✓</td><td></td></tr>
<tr><td>A range check prevents numbers outside a range being entered</td><td>✓</td><td></td></tr>
<tr><td>An invalid character check makes sure names are correct</td><td></td><td>✓</td></tr>
</table>
</td><td>[4]</td></tr>
<tr><td>2</td><td>
<table>
<tr><td>Documentation of the system is not required.</td><td></td></tr>
<tr><td>It is easier to modify the system and still produce the payroll.</td><td>✓</td></tr>
<tr><td>Not all workers will need training. They can learn as they go along.</td><td>✓</td></tr>
<tr><td>Their total wage bill will be lower.</td><td></td></tr>
<tr><td>There is no delay before the new system is fully operative.</td><td></td></tr>
<tr><td>They still have the manual system to use if the new system fails</td><td>✓</td></tr>
</table>
</td><td>[3]</td></tr>
<tr><td>3</td><td>Two from:
• RAM is random access memory and ROM is read only memory
• RAM is volatile/ROM is non volatile/RAM loses contents when switched off/ROM does not lose data when switched off/RAM stores data temporarily
• Data cannot be changed on ROM/data can be changed in RAM
• Data cannot be written to ROM/data is fixed at manufacture
One mark for use of RAM, one mark for use of ROM
• RAM holds the data the user is currently working on.
• ROM holds BIOS/ games programs</td><td>[4]</td></tr>
</table>

Q	Mark Scheme	Marks
4	**(a) Four from:** • have been made redundant • have had to retrain • moved to a different job/new job • deskilled • work shorter hours • less social contact with other workers • cleaner working environment • less dangerous jobs • some have had to relocate	**[4]**
4	**(b) Two from:** eg • fitting wheels to the car • spraying car bodies • connecting the wiring • welding parts together • fitting windscreens • drilling holes • assembling car parts • lifting/moving parts	**[2]**
4	**(c) One from:** **Advantage** • Don't have to pay robots • Robots produce more **consistent** accuracy of work • Robots don't take breaks/work continuously • Robots don't go on strike • Production lines do not need to be made safe for humans **One from:** **Disadvantage** • Initial cost of robots expensive • Cannot adapt to new situations/can only perform one task • Have to be reprogrammed for new tasks • If there is an error will continue regardless unless human intervention • Cost of maintenance/repair	**[2]**
5	**Two from:** • Fewer errors made… /**<u>more</u>** accurate • Nobody is left out… • The data is automatically entered from the database • Less to type • Quicker than typing (individual) **<u>personalised</u>** letters • Members **<u>prefer</u>** personalised letters • Gives the club a more professional appearance	**[2]**

Q	Mark Scheme	Marks
6	**Normal data** • Normal data is data which is within acceptable limits/valid • Any exam mark between 0 and 60 would be normal data, eg 56 **Abnormal data** • Abnormal data is data outside acceptable limits • Any exam mark greater than 60 or less than 0 is abnormal or text eg "sixty" **Extreme data** • Extreme data is data on the boundaries of acceptable limits • Exam marks of 0 or 60 would be extreme data	**[6]**
7	**(i) Four from:** • Observing workers (as they go about their duties) • Questionnaires are given to users (of the existing system to complete)/ written questions about the current system • The workers are interviewed/questions asked about the current system • Documents (which are used in the current system) are examined	**[4]**
7	**(ii) Office workers** would be interviewed/ observed **One** from: They are available any time of day for interviews/there are only three workers so won't be too time consuming observations would not interrupt their working patterns **Van drivers** would be given questionnaires/documents could be examined **One** from: They are not able to be interviewed without disrupting their work/would take too long to interview all of them /they could complete questionnaires at a time which was convenient to them	**[4]**

Q	Mark Scheme	Marks
8	**Six from:** **Encryption** • Hackers can still gain access to data • Readable only to decryption key holder/unreadable by others • Hackers can copy data and crack the encryption at their leisure **Firewall** • Can be configured to block most attacks • Does not prevent internal security breaches • Does not protect against viruses unless separate software added **User ID/password/PIN** • Password has to be entered before access is gained • Password can be changed frequently to avoid hackers guessing them • Unsuccessful logins can throw you out of the system • Passwords can be forgotten • Hackers may still be able to 'crack' password/passwords may be easy to guess **Swipe card/electronic key/key-card/key** • Prevents people without cards accessing system • Cards can be stolen/lost. • Details can be stolen and a new card created **Biometric data** • Biometric data is difficult to replicate • Does not prevent remote access • Some peoples' biometric data may be unusable **Restricted physical access** • locked room/bars on windows/guards prevent physical access • people can forge passes/id card • keys/passes can be stolen/lost. **Different levels of access** • even a successful login doesn't give access to all data • administrator password can be cracked using specialist software • only users with sufficient access rights can access the data **Anti Virus Software** • prevents most viruses deleting the data • has to be kept up to date/ new viruses are constantly being created. **Anti-Spyware** • Prevents hackers from accessing data using spyware • has to be kept up to date 1 mark is available for reasoned conclusion to max 6	**[6]**

Q	Mark Scheme	Marks
9	**(a) Four from:** • Questions are asked by system • Symptoms are typed in • Expert system compares symptoms... • ...with those in the knowledge base • ...using inference engine • ...using rules base • Matches are found • Suggested/probable diagnoses output • Doctor uses professional judgement based on suggestions from expert system	**[4]**
9	**(b) Two from:** • Car fault diagnosis • Tax systems • Plant/animal identification • Chess/card games • Mineral prospecting • Assessing Insurance risk	**[2]**
10	**Five from:** • Some data has to be transported from one computer to another/DVDs and CDs are portable/small/ light • They are used to backup data • …in case the hard disk becomes corrupted. • They are needed to store software/games for sale • DVDs are needed to save video data for use with a home DVD player • CDs are needed to save music/audio data for use with a home CD player • DVDs and CDs fail less often than hard disks • Needed to install operating system • Most applications software is sold on CD • Protecting software by requiring CD/DVD to be present • Can be used for archiving • they are resistant to magnetic fields	**[5]**

Q	Mark Scheme	Marks
11	**Eight from:** **Bar code** • Check digit - it is easy to transpose digits when copying down a long number • Length check - all bar codes (in this db) are the same length/not length check as digits could still be transposed • Not range check - bar codes are technically not numeric fields/digits would still get transposed • Range check – all bar codes are digits in the example given • Type check – all bar codes are digits in the example and would prevent text being entered • Not type check – bar codes are text fields in reality • Not presence check as not all books have bar codes **Book title** • None really suitable – all have different lengths/non-numeric/mixture of text and numbers • Presence check if the users stipulated that every book would have a title **Price** • Range check – must be a most expensive and cheapest book in the store/library • Type check – must be digits only • Not length check – non-text field • Presence check – all books would have a price **ID Number** • Format check – all have two digits then slash then four digits • Must begin with zero • Range check for last four digits – there must be a highest and a lowest number • Invalid character check- must be digits or slash only • Length check - all are 7 characters in length • Not presence check as this only requires data to be entered but not necessarily in the correct format • Presence check – every book has to be identified All fields must be addressed for 8 marks.	**[8]**

Grade Thresholds

General Certificate of Secondary Education
ICT A (1094/1994)
January 2009 Assessment Session

Unit Threshold Marks

Unit		Maximum Mark	a*	a	b	c	d	e	f	g	u
2357F	Raw	60				39	35	31	27	23	0
	UMS	55				48	40	32	24	16	0
2357H	Raw	60	39	34	29	25	20	17			0
	UMS	80	72	64	56	48	40	32			0
2358	Raw	60	58	53	45	37	31	25	19	13	0
	UMS	120	108	96	84	72	60	48	36	24	0
2359F	Raw	60				36	32	28	24	20	0
	UMS	55				48	40	32	24	16	0
2359H	Raw	60	40	34	28	23	17	14			0
	UMS	80	72	64	56	48	40	36			0
2360	Raw	60	53	45	36	28	24	21	18	15	0
	UMS	120	108	96	84	72	60	48	36	24	0

Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

	Maximum Mark	A*	A	B	C	D	E	F	G	U
1094	200	180	160	140	120	100	80	60	40	0

	Maximum Mark	A*	A	B	C	D	E	F	G	U
1994	400	360	320	280	240	200	160	120	80	0

The cumulative percentage of candidates awarded each grade was as follows:

	A*	A	B	C	D	E	F	G	U	Total No. of Cands
1094	1.2	10.3	29.4	60.3	77.0	88.8	95.2	98.8	100	433
1994	5.5	28.8	66.9	87.1	99.4	100	100	100	100	253

For a description of how UMS marks are calculated see;
http://www.ocr.org.uk/exam_system/understand_ums.html

Statistics are correct at the time of publication

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