# GCSE

# Information & Communication Technology A

General Certificate of Secondary Education **GCSE 1994**

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

# Mark Schemes for the Units

# January 2010

**1994/1094/MS/10J**

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**GCSE Information and Communication Technology A (1994)**

**GCSE Information and Communication Technology A (Short Course) (1094)**

**MARK SCHEMES FOR THE UNITS**

# 2357/01 Paper 1 (Foundation)

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 1 | Ticks as shown:<br><br>| Item | Input (✓) | Output (✓) |<br>|---|---|---|<br>| (Help button) | (✓) | |<br>| Keypad | ✓ | |<br>| Microphone | ✓ | |<br>| Motor | | ✓ |<br>| Pressure sensor | ✓ | |<br>| Speaker | | ✓ |<br>| Warning lights | | ✓ | | **[6]** | |
| 2 | Ticks as shown:<br><br>| Use | Tick (✓) |<br>|---|---|<br>| Choosing from an on-screen menu | ✓ |<br>| Moving a pointer on a screen | ✓ |<br>| Reading numbers from a bank cheque | |<br>| Sending output to a printer | |<br>| Storing data | | | **[2]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 3 | Ticks as shown:<br><br><table><tr><th>Statement</th><th>True (✔)</th><th>False (✔)</th></tr><tr><td>A modem is needed when using dial-up internet access</td><td>✔</td><td></td></tr><tr><td>All information on the internet is accurate</td><td></td><td>✔</td></tr><tr><td>Having your own user ID stops others from seeing your files</td><td></td><td>✔</td></tr><tr><td>Using a wrist rest when typing will help prevent RSI</td><td>✔</td><td></td></tr></table> | **[4]** | |
| 4 | **Stage**                                                                    **Order**<br>The email is sent to Trevor's computer                                          6<br>The message is sent from Daphne's computer to her Internet Service Provider (ISP)<br>                                                                                 3<br>**(Daphne types the message)**                                         **(1)**<br>**(Trevor reads the email)**                                           **(7)**<br>Daphne's ISP sends her message to Trevor's ISP                             4<br>Trevor logs onto his email                                                      5<br>Daphne enters Trevor's email address                                        2<br><br>Marks to be awarded as follows:<br><br>                                                   **All 5 stages correct 4**<br>                                        **3 stages in correct sequence 3**<br>                                        **2 stages in correct sequence 2**<br>                                                              **1 correct 1**<br>                                                        **none correct 0** | **[4]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 5 | Letters as follows:<br><br>**D** magnetic tape<br>**C** hard disk<br>**B** USB flash memory stick<br>**A** CD-ROM<br>**E** internal memory<br><br>Do not accept anything that is not in the list. | **[5]** | |
| | | | |
| 6(a) | Rule 1 (tampering with wires), one from:<br>• may cause loss of data<br>• damage to computers<br>• electrical fire<br>• electrocution<br><br>Rule 2 (bags and coats), one from:<br>• users may trip/fall<br>• coats may be wet/cause damage<br>• coats can be used in theft of items from room<br><br>Rule 3 (floppy disks/USB disks), one from:<br>• may carry viruses<br>• may be used to attempt to install unwanted applications/software/games<br>• may be used to steal software/files<br><br>Rule 4 (external emails), one from:<br>• may carry viruses<br>• may be used to attempt to install unwanted applications/software<br>• may be used to steal software/files<br>• may be sent inappropriate content<br><br>Rule 5 (ID & passwords), one from:<br>• may alter/delete/copy/access other persons work/files<br>• may be used for illegal/unauthorised actions blaming the legitimate owner of | **[5]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| |       account <br> •     multiple simultaneous logins can cause file corruption | | |
| | | | |
| **6(b)** | **One from**: <br> •     (because drinks/food may be spilled/dropped) causing damage e.g. keyboards/mice <br> •     liquids can cause electrical damage <br> •     liquids can cause electrocution | **[1]** | |
| | | | |
| **7(a)** | **One from**: <br> •     safer than manual monitoring <br> •     person does not need to always be present/can do other things <br> •     can be done at weekends and holidays <br> •     can be done over long periods <br> •     data is already in electronic form/can be imported into a computer for analysis <br> •     readings are accurate/less mistakes <br> •     readings are at accurate intervals <br> •     carried out remotely <br> •     linked to control system | **[1]** | |
| | | | |
| **7(b)** | **Two from**: <br> •     protect computer input circuitry <br> •     convert analogue data to digital data <br> •     sensors output analogue data/computers require digital data/computers cannot process analogue data <br> •     store the data before passing it to the computer | **[2]** | |
| | | | |
| **7(c)** | B3 <br> Accept other standard notations i.e. R3C2 Col B, Row 3 | **[1]** | |
| | | | |
| **7(d)** | =average(B2:B8) <br><br> *One mark for the function i.e. =average()* <br> *One mark for the correct range i.e. B2 to B8* <br> *One mark for other correctly working formula e.g. (B2+B3+B4+B5+B6+B7+B8)/7* | **[2]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 7(e) | **Four from**:<br>• select/highlight data<br>• correct range selected (A2 to B8)<br>• select/click on chart wizard<br>• select chart type<br>• add axis labels<br>• delete legend<br>• add title<br>• format title/axis labels<br>• choose position of chart/resize chart | **[4]** | |
| | | | |
| 7(f) | **One from**:<br>• (save and) insert from file<br>• copy and paste | **[1]** | |
| | | | |
| 7(g) | **Two from**:<br>• use a search engine<br>• type in the URL/web address<br>• follow a (hyper)link from another page<br>• ...from a saved/favourite/bookmark<br>• history link | **[2]** | |
| | | | |
| 8(a) | **One from**:<br>• can work anywhere<br>• work always with her/can work at any time<br>• no need to use portable/removable media | **[1]** | |
| | | | |
| 8(b) | **Two from**:<br>• laptop can be stolen<br>• can be awkward/nuisance to carry<br>• can be difficult to secure<br>• easily damaged in transit<br>• target for thieves/muggers<br>• specification can be less than a desktop/valid example of lower specification or | **[2]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| | consequences | | |
| | • can view inappropriate materials more easily/can use on-line chat rooms unsupervised /plagiarism/copying of work is easier | | |
| | • increased risk of health problems | | |
| | • short battery life | | |
| | | | |
| **9** | *Up to one mark for named device, up to three marks for how imported* | | |
| | | | |
| | ***EITHER*** | | |
| | | | |
| | ***Device, one from:*** | | |
| | (Digital)camera/phone/card reader | | |
| | | | |
| | ***How imported, three from:*** | | |
| | ***For a new image:*** | | |
| | • connect camera to computer | | |
| | • …..via USB/cables/wireless | | |
| | • transfer files from camera to computer | | |
| | • remove memory card from camera | | |
| | • …..insert into card slot/use card reader | | |
| | • copy/cut files and paste/drag and drop into computer storage | | |
| | ***OR*** | | |
| | | | |
| | ***Device:*** | | |
| | Scanner | | |
| | ***How imported, three from:*** | | |
| | ***For an existing photograph/already printed photograph:*** | | |
| | • place photograph on scanner | | |
| | • start scan software/choose scan option within software/press button on scanner | | |
| | • preview scan | | |
| | • choose scan options e.g. greyscale/colour/black and white/area to scan/resolution | | |
| | • scan image | **[4]** | |
| | • crop/format/edit image | | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| | •    save image/choose file destination<br>Candidates must relate the reasons to the stated device. | | |
| | | | |
| 10(a) | **Four from**:<br>•    can send attachments/attach files<br>•    can send to multiple recipients at once<br>•    can be forwarded to others<br>•    have an electronic copy for reference/already in electronic format<br>•    can request automatic receipt notification<br>•    can request automatic read notification<br>•    can receive/be picked up from anywhere with internet access<br>•    can have an audit trail in an email<br>•    can send hyperlinks in a email<br>Do not accept references to cost or speed | **[4]** | |
| | | | |
| 10(b) | **One from**:<br>•    can be insecure<br>•    can be misinterpreted/impersonal<br>•    no guarantee of delivery or reply<br>•    can be misfiled/overlooked<br>•    can be altered so is not suitable for e.g. legal documents<br>•    emails can carry viruses<br>Do not accept references to cost or speed. | **[1]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 11 | **Four from**:<br>• never give out your personal contact details<br>• be wary of discussing the area in which you live<br>• do not state which school you go to<br>• never use a photograph of yourself<br>• check who you are in contact with/be wary that their identity/details may be false<br>• never agree to meet another person from a chat room/always tell e.g. parents who you are going to meet<br>• never go alone to meet another person from a chat room<br>• report any suspicious activity/contacts | **[4]** | |
| | | | |
| 12 | **Four from**:<br>• type criteria/criterion in text entry box<br>   o   valid example of a search criterion<br>• multiple criteria<br>   o   use +,-AND/OR/NOT to link criteria<br>• use speech marks/inverted commas<br>   o   to keep criteria together/search together<br>• use advanced search facilities<br>   o   to select criteria | **[4]** | |
| | | | |
| | | | **TOTAL MARKS 60** |

# 2357/02 Paper 1 (Higher)

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 1 | Rule 1 (tampering with wires), one from:<br>• may cause loss of data<br>• damage to computers<br>• electrical fire<br>• electrocution<br><br>Rule 2 (bags and coats), one from:<br>• users may trip/fall<br>• coats may be wet/cause damage<br>• coats can be used in theft of items from room<br><br>Rule 3 (floppy disks/USB disks), one from:<br>• may carry viruses<br>• may be used to attempt to install unwanted applications/software/games<br>• may be used to steal software/files<br><br>Rule 4 (external emails), one from:<br>• may carry viruses<br>• may be used to attempt to install unwanted applications/software<br>• may be used to steal software/files<br>• may be sent inappropriate content<br><br>Rule 5 (ID & passwords), one from:<br>• may alter/delete/copy/access other persons work/files<br>• may be used for illegal/unauthorised actions blaming the legitimate owner of account<br>• multiple simultaneous logins can cause file corruption | **[5]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 2 (a) | **One from**:<br>• safer than manual monitoring<br>• person does not need to always be present/can do other things<br>• can be done at weekends and holidays<br>• can be done over long periods<br>• data is already in electronic form/can be imported into a computer for analysis<br>• readings are accurate/less mistakes<br>• readings are at accurate intervals<br>• carried out remotely<br>• linked to control system | **[1]** | |
| | | | |
| 2 (b) | **Two from**:<br>• protect computer input circuitry<br>• convert analogue data to digital data<br>• sensors output analogue data/computers require digital data/computers cannot process analogue data<br>• store the data before passing it to the computer | **[2]** | |
| 2 (c) | **Four from**:<br>• select/highlight data<br>• correct range selected (A2 to B8)<br>• select/click on chart wizard<br>• select chart type<br>• add axis labels<br>• delete legend<br>• add title<br>• format title/axis labels<br>• choose position of chart/resize chart | **[4]** | |
| | | | |
| 3 (a) | **One from**:<br>• can work anywhere<br>• work always with her/can work at any time<br>• no need to use portable/removable media | **[1]** | |
| | | | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 3 (b) | **Two from**:<br>• laptop can be stolen<br>• can be awkward/nuisance to carry<br>• can be difficult to secure<br>• easily damaged in transit<br>• target for thieves/muggers<br>• specification can be less than a desktop/valid example of lower specification or consequences<br>• can view inappropriate materials more easily/can use on-line chat rooms unsupervised /plagiarism/copying of work is easier<br>• increased risk of health problems<br>• short battery life | **[2]** | |
| | | | |
| 4 | *Up to one mark for named device, up to three marks for how imported*<br><br>***EITHER***<br><br>***Device, one from:***<br>(Digital)camera/phone/card reader<br><br>***How imported, three from:***<br>***For a new image:***<br>• connect camera to computer<br>• …..via USB/cables/wireless<br>• transfer files from camera to computer<br>• remove memory card from camera<br>• …..insert into card slot/use card reader<br>• copy/cut files and paste/drag and drop into computer storage<br><br>***OR***<br><br>***Device:***<br>Scanner<br>***How imported, three from:***<br>***For an existing photograph/already printed photograph:*** | **[4]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| | • place photograph on scanner <br> • start scan software/choose scan option within software/press button on scanner <br> • preview scan <br> • choose scan options e.g. greyscale/colour/black and white/area to scan/resolution <br> • scan image <br> • crop/format/edit image <br> • save image/choose file destination <br> Candidates must relate the reasons to the stated device. | | |
| | | | |
| 5 (a) | **Four from**: <br> • can send attachments/attach files <br> • can send to multiple recipients at once <br> • can be forwarded to others <br> • have an electronic copy for reference/already in electronic format <br> • can request automatic receipt notification <br> • can request automatic read notification <br> • can receive/be picked up from anywhere with internet access <br> Do not accept references to cost or speed | **[4]** | |
| | | | |
| 5 (b) | **One from**: <br> • can be insecure <br> • can be misinterpreted/impersonal <br> • no guarantee of delivery or reply <br> • can be misfiled/overlooked <br> • can be altered so is not suitable for e.g. legal documents <br> • emails can carry viruses <br> Do not accept references to cost or speed. | **[1]** | |
| | | | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| 6 | **Four from**:<br>• never give out your personal contact details<br>• be wary of discussing the area in which you live<br>• do not state which school you go to<br>• never use a photograph of yourself<br>• check who you are in contact with/be wary that their identity/details may be false<br>• never agree to meet another person from a chat room/always tell e.g. parents who you are going to meet<br>• never go alone to meet another person from a chat room<br>• report any suspicious activity/contacts | **[4]** | |
| | | | |
| 7 | **Four from**:<br>• type criteria/criterion in text entry box<br>  o valid example of a search criterion<br>• multiple criteria<br>  o use +,-AND/OR/NOT to link criteria<br>• use speech marks/inverted commas<br>  o to keep criteria together/search together<br>• use advanced search facilities<br>  o to select criteria | **[4]** | |
| | | | |
| 8 (a) | To gain a mark, the method **plus** the use is required.<br><br>**Six from**:<br>• use high-speed communication links/broadband services/internet access/WAN for (fast) data/file transfer<br>• use of email to send messages<br>• use of email to send documents/files<br>• fax machines for legal/confidential documents<br>• use of mobile phones/PDAs to keep in contact (with office)<br>• use of encryption/passwords security of data<br>• VoIP systems/telephone conversations via internet<br>• use of VPNs to set up remote network connection/desktop with office system<br>• video/tele-conferencing to set up meetings with other workers without travelling | **[6]** | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
|  | • use of portable electronic storage for file transfer<br>• use of internet for research |  |  |
|  |  |  |  |
| 8 (b) | **Two from**:<br>• difficult to supervise employees<br>   o cannot ensure/be sure that workers work the correct number of hours<br>   o employees might not complete the work on time/employees distracted at home<br>   o employees might produce work of lower standard than when in office<br>   o employees might not be doing the work themselves<br>• difficult to contact employees<br>   o employees may not be available/at home to receive an email/ telephone call<br>   o difficult to motivate staff at a distance<br>   o lack of personal intervention<br>   o face to face meetings more difficult<br>   o lack of staff interaction<br>   o do not know staff personally<br>   o difficult to enforce regulations e.g. health & safety<br>• have to provide/support of ICT services<br>   o this has increased costs e.g. support staff/internet access<br>• company may be concerned about the security of data<br>   o confidentiality<br>   o loss of data | **[4]** |  |
|  |  |  |  |
| 9 | **Four from**:<br>• reduced queuing time/get served quickly<br>• no need for students/canteen to carry/have money/cash<br>• reduced bullying/mugging as less cash carried<br>• food choices may be recorded/enforced<br>• timed entry can be enforced<br>• pupils can be easily identified<br>   o reduced behavioural problems<br>   o cards can be returned if lost<br>• no discrimination of those on benefits/receiving free meals<br>• reduced staff levels<br>• school gets the money in advance | **[4]** |  |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| | | | |
| **10 (a)** | **Two from**: <br>• cheap labour <br>  o   has reduced costs to the company. <br>• recruitment of new staff <br>  o   advertising in a different country may be cheaper. <br>• premises are cheaper in different countries <br>  o   reduced over heads/reduced utility costs <br>• setup costs may be less <br>  o   reduced initial layout <br>• regulations/laws may be more relaxed in different countries <br>  o   less money spent on adhering to e.g. safety regulations/data protection <br>• can provide 24 hour service <br>  o   using different call centres in different time zones | **[4]** | |
| | | | |
| **10 (b)** | **Five from**: <br><br>*Example Positives*: <br>• can contact company at any time by email <br>• no need to wait for answer/be put on hold via telephone/no long phone calls <br>• call centre available anytime <br><br>*Example Negatives* <br>• if telephoning can experience delays through time differences/cultural/language differences. <br>• must use electronic communications <br>• not all have internet access so cannot use email/web. <br>• no personal access to company staff <br>• often no instant feedback. <br>• staff stick to a script (and may not answer specific questions) <br>**Max 4 marks if all positives or negatives.** | **[5]** | |
| | | | |

| Question | Answer | Mark | Additional Guidance |
|---|---|---|---|
| **10 (c)** | **Five from**:<br><br>*Example Positives*<br>• some customers adept with ICT so can easily/quickly contact the company<br>• help can be accessed from any place that has internet access<br>• help always available<br>• FAQ available<br><br>*Example Negatives*<br>• not all individual/specific questions will be answered on a website<br>• generic FAQs not specific to customer problem<br>• must use internet/have internet access<br>• some customers not adept with ICT<br>     o so will be disenfranchised/unable to get help<br>     o so will use another company's products/services<br>**Max 4 marks if all positives or negatives.** | **[5]** | |
| | | | |
| | | | **TOTAL MARKS 60** |

# 2359/01 Paper 3 (Foundation)

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 1 | **buzzer**       **magnetic tape**       **monitor** <br><br> **motor**       (**pointer**)       (**window**) | [2] | |
| 2 | <table><tr><th>Statement</th><th>True (✔)</th><th>False (✔)</th></tr><tr><td>A CD-R allows quicker access to data than a hard disk</td><td></td><td>✔</td></tr><tr><td>A DVD is a portable medium</td><td>✔</td><td></td></tr><tr><td>A DVD stores more data than a CD</td><td>✔</td><td></td></tr><tr><td>Data is transferred more quickly from a DVD than from a hard disk</td><td></td><td>✔</td></tr><tr><td>Data on a CD-RW is permanent and cannot be changed</td><td></td><td>✔</td></tr></table> | [5] | |
| 3 | A **bar code reader** can be used to input data from a book in a library <br><br> A **robot** can be used to spray paint on cars <br><br> A **remote control** is used to change channels on a television <br><br> A **magnetic stripe** is used to hold data on a bank card <br><br> A **keyboard** is used to input text to a word processing package | [5] | |
| 4    (a) | 5 | [1] | |

| Question Number | | Expected Answer | Mark | Rationale |
|---|---|---|---|---|
| 4 | (b) | 4 | [1] | |
| 4 | (c) | Student number | [1] | |
| 4 | (d) | Text/Alphanumeric/String | [1] | |
| 4 | (e) | (Test) score (out of hundred)/Mark | [1] | |
| 4 | (f) | (see table below) | [4] | |
| 5 | | (see table below) | [3] | |

**4 (f)**

| Data | Range check | Format check | Invalid character check | Check digit |
|---|---|---|---|---|
| House | | | ✓ | |
| Student number | | | | ✓ |
| Teaching group | | ✓ | | |
| Test score | ✓ | | | |

**5**

| Sensor | (✓) |
|---|---|
| Humidity | ✓ |
| Light | ✓ |
| Rain | |
| Sound | |
| Temperature | ✓ |
| Wind | |

| Question Number | | Expected Answer | Mark | Rationale |
|---|---|---|---|---|
| 6 | (a) | **Three from**:<br><br>• observation<br>• interviews<br>• looking at documents<br>• questionnaires | **[3]** | |
| 6 | (b) | **Three from**:<br><br>• data capture forms<br>• screen layouts<br>• report layouts<br>• screen displays<br>• audio output<br>• validation routines<br>• data structures/databases/spreadsheets<br>• file structures<br>• processing<br>• flowcharts<br>• algorithms<br>• program code | **[3]** | |
| 6 | (i) | Both the existing and new systems are run<br>together/at the same time | **[1]**<br>**[1]** | |
| 6 | (ii) | The existing system is replaced by the new system<br>overnight/immediately | **[1]**<br>**[1]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 7 | <table><tr><td>**Requirement**</td><td>**(✓)**</td></tr><tr><td>Individuals have a right to view the information held about them.</td><td>✓</td></tr><tr><td>Personal data shall be accurate and, where necessary, kept up to date.</td><td>✓</td></tr><tr><td>Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed.</td><td>✓</td></tr><tr><td>Personal data shall be kept for 100 years.</td><td></td></tr><tr><td>Personal data shall be obtained for any purpose the data holder feels is necessary.</td><td></td></tr><tr><td>Personal data shall be processed fairly and lawfully.</td><td>✓</td></tr><tr><td>Personal data shall be processed without considering the rights of data subjects.</td><td></td></tr></table> | **[4]** | |
| 8 (a) | **Two from**:<br><br>• two people type/input the same data in/one person types the same data twice<br>• the computer compares the two versions<br>• if there are differences computer makes a sound/message appears on screen/keyboard freezes/data is highlighted<br>• a valid example e.g. creating login/registration details<br>• the typist chooses the correct version and the process continues | **[2]** | |

| Question Number | Expected Answer | | Mark | Rationale |
|---|---|---|---|---|
| 8 (b) | **Two from**:<br><br>• a person reads through the data on screen/in the system/database<br>• compares it with the data capture form/original source<br>• corrects any mistakes | | **[2]** | |
| 9 (a) | | **(✓)** | | |
| | Cars produced by robots are always perfect | | | |
| | Robots can work 24 hours a day, 7 days a week | ✓ | | |
| | Robots do not need maintaining | | | |
| | Robots do not need paying | ✓ | | |
| | Robots never break down | | **[3]** | |
| | The finished product is more consistent | ✓ | | |
| 9 (b) | | **(✓)** | | |
| | Humans are more accurate than robots | | | |
| | Humans are quicker than robots | | | |
| | Humans need to take breaks | | | |
| | Robots are expensive to buy and set up | ✓ | | |
| | Robots are not adaptable to a sudden change of situation | ✓ | | |
| | Wrong programming can mean several cars are wrongly produced before the situation is noticed | ✓ | **[3]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 10 | **One** mark for each point<br>**Sound (output)**<br>Could be used to reproduce the noise of the eruption/sound of bubbling<br>Could be used to provide background music<br><br>**Animation sequences**<br>Could be used to create a model of a volcano erupting<br>Could be used to demonstrate the flow of lava<br>Could be used for movement of text and images<br><br>**Video films**<br>Could be used to show an actual volcano erupting<br>Could be used to show the actual flow of lava<br><br>**Voice output**<br>Could be used to produce a narrative accompanying the slides<br>Could be used to produce interviews with onlookers<br><br>**Hyperlinks**<br>Could be used to link to websites about volcanoes<br>Could be used to move quickly to another slide later/earlier in the presentation<br><br>**Slide transitions**<br>Could be used to make the change of slide/topic more visually exciting<br><br>Maximum of 4 features. | **[6]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 11 | **Two from:**<br>**Checkout operator**<br>• some checkout operators might have lost their jobs<br>    o because there are fewer customers coming into the shops<br>• some checkout operators might have had to re-train<br>    o as opportunities for other jobs arise<br>• some checkout operators could go part time/job share<br>    o because there are fewer operators needed/fewer customers<br>    o to reduce the need for unemployment<br>• some checkout operators might have changed jobs<br>    o otherwise they would be unemployed<br><br>**Two from:**<br>**Manager**<br>• managers may have a wider range of workers to manage<br>• may have to manage pickers/van drivers as well as current types of workers<br>• managers may have a wider range of situations to deal with<br>• managers may have to organise part time rotas/job shares/delivery rotas<br>• managers may have had to organise training/re-training<br>• might have to receive training<br>    o to manage e.g. flexi-time/job sharing/online orders<br>• might lose job due to fewer branches<br><br>**Two from:**<br>**IT staff**<br>• technical jobs may have increased<br>    o due to need for web/designers/programmers<br>• these workers could work from home/remotely<br>    o as some aspects such as web design do not require their presence in the workplace<br>• computer operators/workers may have had to learn web design skills<br>• work longer hours | | |

# 2359/02 Paper 3 (Higher)

| Question Number | Expected Answer | | Mark | Rationale |
|---|---|---|---|---|
| 1 | **Requirement** | ✔ | | |
| | Individuals have a right to view the information held about them. | ✔ | | |
| | Personal data shall be accurate and, where necessary, kept up to date. | ✔ | | |
| | Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed. | ✔ | | |
| | Personal data shall be kept for 100 years. | | | |
| | Personal data shall be obtained for any purpose the data holder feels is necessary. | | | |
| | Personal data shall be processed fairly and lawfully. | ✔ | | |
| | Personal data shall be processed without considering the rights of data subjects. | | **[4]** | |
| 2 (a) | **Two from:**<br><br>• two people type the same data in/one person types the same data twice<br>• the computer compares the two versions<br>• if there are differences computer makes a sound/message appears on screen/keyboard freezes/data is highlighted<br>• typist chooses correct version and process continues<br>• a valid example eg creating login/registration details | | **[2]** | |
| 2 (b) | **Two from:**<br><br>• a person reads through the data on screen/in the system/database<br>• compares it with the data capture form/original source<br>• person corrects any mistakes | | **[2]** | |

| Question Number | Expected Answer | | | Mark | Rationale |
|---|---|---|---|---|---|
| 3 (a) | | (✓) | | | |
| | Cars produced by robots are always perfect | | | | |
| | Robots can work 24 hours a day, 7 days a week | ✓ | | | |
| | Robots do not need maintaining | | | | |
| | Robots do not need paying | ✓ | | | |
| | Robots never break down | | | [3] | |
| | The finished product is more consistent | ✓ | | | |
| 3 (b) | | (✓) | | | |
| | Humans are more accurate than robots | | | | |
| | Humans are quicker than robots | | | | |
| | Humans need to take breaks | | | | |
| | Robots are expensive to buy and set up | ✓ | | | |
| | Robots are not adaptable to a sudden change of situation | ✓ | | | |
| | Wrong programming can mean several cars are wrongly produced before the situation is noticed | ✓ | | [3] | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 4 | **One** mark for each point<br><br>**Sound (output)**<br>Could be used to reproduce the noise of the eruption/sound of bubbling<br>Could be used to provide background music<br><br>**Animation sequences**<br>Could be used to create a model of a volcano erupting<br>Could be used to demonstrate the flow of lava<br>Could be used for movement of text and images<br><br>**Video films**<br>Could be used to show an actual volcano erupting<br>Could be used to show the actual flow of lava<br><br>**Voice output**<br>Could be used to produce a narrative accompanying the slides<br>Could be used to produce interviews with onlookers<br><br>**Hyperlinks**<br>Could be used to link to websites about volcanoes<br>Could be used to move quickly to another slide later/earlier in the presentation<br><br>**Slide transitions**<br>Could be used to make the change of slide/topic more visually exciting<br><br>Maximum of four features | **[6]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 5 | **Two from:**<br>**Checkout operator**<br>• some checkout operators might have lost their jobs<br>    o because there are fewer customers coming into the shops<br>• some checkout operators might have had to re-train<br>    o as opportunities for other jobs arise<br>• some checkout operators could go part time/job share<br>    o because there are fewer operators needed/fewer customers<br>    o to reduce the need for unemployment<br>• some checkout operators might have changed jobs<br>    o otherwise they would be unemployed<br><br>**Two from:**<br>**Manager**<br>• managers may have a wider range of workers to manage<br>• may have to manage pickers/van drivers as well as current types of workers<br>• managers may have a wider range of situations to deal with<br>• managers may have to organise part time rotas/job shares/delivery rotas<br>• managers may have had to organise training/re-training<br>• might have to receive training<br>    o to manage e.g. flexi-time/job sharing/on line orders<br>• might lose job due to fewer branches<br><br>**Two from:**<br>**IT staff**<br>• technical jobs may have increased<br>    o due to need for web/designers/programmers<br>• these workers could work from home/remotely<br>    o as some aspects such as web design do not require their presence in the workplace<br>• computer operators/workers may have had to learn web design skills<br>• work longer hours | | |
| | | **[6]** | |

| Question Number | | Expected Answer | Mark | Rationale |
|---|---|---|---|---|
| 6 | (a) | Both the existing and new systems are run<br>together/at the same time | [1]<br>[1] | |
| 6 | (a) | The existing system is replaced by the new system<br>overnight/immediately | [1]<br>[1] | |
| 6 | (b) | **Three pairs** from:<br><br>The purpose and limitations of the system<br>What the system is intended to do and what it can't do<br><br>Hardware requirements<br>The input, output and storage devices required<br><br>Software requirements<br>e.g. operating systems/application software/utilities/programming language<br><br>How to use the features of the system<br>e.g. add a record/delete a record/print<br>Annotated outputs to illustrate uses<br><br>The inputs and outputs of the system<br>Both data and devices should be considered<br><br>Validation routines<br>Examples of these<br><br>Troubleshooting section/FAQs/sample runs/help facility<br>When problems arise with system<br>How to deal with possible problems<br>Contact details/hotline | [6] | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| | Error messages<br>Description of their meaning<br><br>How to set up the system<br>e.g. how to connect hardware together/install software/register software<br>Screen shots of system installation | | |
| 7 | **Four from**:<br><br>Ring – all computers are connected to each of the computers either side of it.<br>Advantage – no server to break down/reduced cost of cabling / uses less cabling/ cheaper due to no server<br>Star – all computers are connected to a common hub/server/concentrator/main computer<br>Advantage – If one computer breaks down others can carry on | **[4]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 8 | **Six from:**<br><br>**OCR advantages**<br>• large amounts of text can be read<br>• this is helpful for people with disabilities<br>• original documents can be archived<br>• not limited to special types of fonts/can read some types of hand written documents e.g. utility meter readings/passport applications<br><br>**OCR disadvantages**<br>• slow process as data has to be re-read/checked for errors<br>• frequent inaccuracies in reading text<br>• grids/tables difficult to convert to text<br><br>**MICR advantages**<br>• difficult to forge<br>• quick to input data from cheques<br>• not affected by smudges/overwriting<br><br>**MICR disadvantages**<br>• not always easy for humans to read<br>• difficult to amend incorrect data<br>• more expensive than other methods<br>• limited to reading magnetic characters from bank cheques<br><br>**OMR advantages**<br>• fewer errors in data entry/easier to validate<br>• data input is very quick as less data per sheet than OCR<br><br>**OMR disadvantages**<br>• may be difficult to change the data<br>• corrected marks/smudges can be incorrectly read<br>• limited to reading marks from pre-printed forms e.g. lottery tickets/exam papers<br><br><div align="right">T</div> | **[6]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 9 | **Four from**:<br><br>• harmonious<br>    o pleasing colour scheme<br>    o avoiding bright colours<br>    o avoiding clashing colours<br>• easy to follow<br>    o instructions how to complete form are included<br>    o examples of data<br>• well-organised question layout<br>    o logical order of questions<br>• adequate space<br>    o individual character boxes<br>• fonts/font size should be easy to read<br>• should contain closed questions where possible<br>    o multiple choice/tick boxes<br>    o yes/no answers<br>• plenty of white space/questions well spaced out | | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 10 | **Five from**:<br><br>**Advantages**<br>• less money spent on travel/more disposable income<br>• less time spent on travel<br>• more time for leisure activities<br>• can spend more time with family<br>• can work when it suits<br>• doesn't have to get up so early<br>• can work at own pace<br>• may be fewer distractions<br>• less traffic pollution/lower carbon footprint<br>• less traffic congestion<br>• less stress because less driving in rush hour<br>• the do not have to live close to their work place<br>• easier for the house bound/disabled as they do not need to travel<br><br>**Disadvantages**<br>• less idea sharing with other workers<br>• need a lot of self-motivation/less work produced due to too much freedom<br>• family can disturb worker<br>• less social interaction with management/fellow workers<br>• difficult to find work space<br>One mark for suitable reasoned conclusion not already awarded<br>**Max 4 for all advantages/disadvantages** | **[5]** | |

| Question Number | Expected Answer | Mark | Rationale |
|---|---|---|---|
| 11 | **Five from**:<br><br>RAM<br>•    stores data which can be changed/stores current user work/application software<br>•    current user work consists of data which needs to be changed<br>•    application software might need to be updated<br>•    changeable memory is needed to load previous work from other media<br><br>ROM<br>•    there needs to be ROM to contain settings which need to be the same every time the machine is switched on<br>•    ROM cannot be changed/Stores BIOS/program instructions for games<br>      o    so cannot be used to store temporary data<br>•    some instructions need to be impossible to change<br>•    BIOS/games software must be impossible to change | **[5]** | |

# Grade Thresholds

**General Certificate of Secondary Education**
**ICT A (1094/1994)**
**January 2010 Examination Series**

**Unit Threshold Marks**

| Unit | | Maximum Mark | A* | A | B | C | D | E | F | G | U |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2357/01 | Raw | 60 | n/a | n/a | n/a | 39 | 35 | 31 | 28 | 25 | 0 |
| | UMS | 55 | n/a | n/a | n/a | 48 | 40 | 32 | 24 | 16 | 0 |
| 2357/02 | Raw | 60 | 39 | 35 | 31 | 27 | 23 | 21 | n/a | n/a | 0 |
| | UMS | 80 | 72 | 64 | 56 | 48 | 40 | 36 | n/a | n/a | 0 |
| 2358 | Raw | 60 | 58 | 53 | 45 | 38 | 32 | 26 | 20 | 14 | 0 |
| | UMS | 120 | 108 | 96 | 84 | 72 | 60 | 48 | 36 | 24 | 0 |
| 2359/01 | Raw | 60 | n/a | n/a | n/a | 38 | 34 | 30 | 26 | 22 | 0 |
| | UMS | 55 | n/a | n/a | n/a | 48 | 40 | 32 | 24 | 16 | 0 |
| 2359/02 | Raw | 60 | 37 | 32 | 27 | 23 | 19 | 17 | n/a | n/a | 0 |
| | UMS | 80 | 72 | 64 | 56 | 48 | 40 | 36 | n/a | n/a | 0 |
| 2360 | Raw | 60 | 54 | 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 (ie 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** | 4.1 | 18.2 | 42.1 | 66.9 | 82.9 | 91.4 | 95.5 | 98.2 | 100 | 666 |
| **1994** | 6.5 | 26.1 | 55.1 | 84.8 | 96.4 | 99.3 | 100 | 100 | 100 | 158 |

**824 candidates were entered for aggregation this series**

For a description of how UMS marks are calculated see:
http://www.ocr.org.uk/learners/ums/index.html

Statistics are correct at the time of publication.

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