

Information & Communication Technology A

General Certificate of Secondary Education **GCSE 1994**

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

Report on the Units

January 2007

1994/1094/MS/R/07J

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

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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Chief Examiner's Report

The Full Course (Specification 1994) is comprised of four units: 2357, 2358, 2359 and 2360. The Short Course (1094) consists of Units 2357 and 2358 only.

Units 2358 and 2360 are internally assessed coursework. Units 2357 and 2359 are externally assessed written papers.

General Comments on Externally assessed Units (Units 2357 and 2359)

For this specification, Centres are once again reminded that candidates should use generic terms such as spreadsheet, DTP, word processor etc as brand names do not gain credit. Centres must ensure that candidates are taught the generic terms and that they use them in their responses to questions.

Graded response mark schemes were used in this specification and Centres are directed towards the published mark schemes of each unit for more details

Centres are, again, requested to remind their candidates that all responses (answers) must be written on the lines provided and within the marked areas. Also, the use of additional pages should be actively discouraged. There is ample room provided on the question papers for candidates' responses.

General Comments on Internally assessed Units (Units 2358 and 2360)

Centres are reminded that it is a requirement for both Unit 2358 (Projects 1a/1b) and 2360 (Project 2) to supply a Centre Authentication Form (**Form CCS160**), signed by its teacher/assessors, and this form should be posted to the moderator with the mark sheets (**MS1**) and, where applicable, coursework mark summary sheets.

Centres are once again reminded that it is a requirement for each candidate to sign a Candidate Authentication Form indicating that the work submitted is their own. These forms should be retained at the Centre unless requested by the moderator.

In Unit 2358 (Short Course coursework, Projects 1a and 1b), where there are more choices of strands the accompanying documentation is essential in enabling the moderator to examine the work. Centres are requested to ensure that the moderator receives the required documentation by the due deadline date. A number of Centres failed to send the required coursework mark summary sheets and this delayed the moderation process. Also, some Centres failed to respond to the request for a sample within the specified timeframe and this also delayed the process.

Centres are also reminded that there must be internal moderation of the coursework.

Centres are referred to the published OCR documents relating to coursework administration, to the 1094/1994 Specification and to the Teachers Guides.

Note also that OCR offers a Coursework Consultancy Service for those in any doubt of the suitability of the coursework being submitted.

2357/01 (Foundation)

General Comments

Candidates appear to have generally performed as would be expected. While most gave answers to all the questions, a number failed to make a response to some. However, there were some questions where the candidates appeared to have little knowledge to answer these questions. This leads to the suspicion that the specification was not fully taught.

Candidates appear to have been entered at the appropriate level by Centres.

Brand names still appeared, despite repeated warnings, and as usual did not gain credit. An example was "Internet Explorer" when "a browser" would have gained the mark.

Comments on Individual Questions

- 1) Most candidates achieved full marks. There were, however, a significant few who thought that joysticks and microphones were software and that a spreadsheet was hardware.
- 2) Again most candidates achieved full marks, but there were some who only achieved one mark - usually for the editing a picture on screen part.
- 3) Most candidates achieved full marks, some reversed the answers, and bizarrely a few chose the same printer for both answers.
- 4)
 - (a) All candidates gained at least one mark from this question. Not surprisingly they knew how software for computer games was distributed, but less than half achieved all three marks.
 - (b) Most candidates achieved at least one mark here with most answers being from the first three identified in the mark scheme. However every so often it was pleasing to see the last answer cropping up. Although the use of floppy disks is now less common, candidates are still aware of their use.
- 5) All candidates scored the first mark and most scored the other two.
- 6)
 - (a) This question was well answered with most candidates getting three marks.
 - (b) This was usually correct, but a significant minority put in the formula that appeared in the cell or the value in the cell instead of the cell reference.
 - (c) Same comment as (b).
 - (d) A majority of candidates scored two marks, the most common answer being making a backup to removable media. Only a few scored all three.

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- 7) (a) This question was very poorly answered. The most common answers were “The Internet” or “Internet Explorer”.
- (b) Most candidates achieved this mark. A few, however, failed to answer this part or put in some Microsoft product.
- (c) (i) Most answers referred to a link and therefore gained the mark. There were unusual spellings of hyperlink. Once again wrong answers referred to more Microsoft products.
- (ii) Most candidates obtained the mark through getting the idea of moving to another page, but a significant number answered with a version of “you would enter the details”.
- 8) (a) Most candidates achieved one mark for this question through “accessing a computer/files”. Too many referred to files as though they were trying to access a filing cabinet rather than a computer system. To obtain the second mark the candidate needed to mention the “permission” part. A small number of responses used the term “malicious”, not realising that this does not imply that the access is unauthorised.
- (b) Most candidates gained one mark for “...damaging/deleting files ...” and some knew a virus was a program, but the second mark seemed difficult to obtain.
- 9) (a) There were very few full marks for this part of the question. Some candidates correctly identified the different forms of data between sensors and computer but too many are still very vague about this and only suggested that the interface was to “change” signals “to something the computer could understand”. A lot of candidates mentioned water and electricity here but failed to make the appropriate point, and there were too many “blow up the computer” answers.
- (b) The most common correct response stated that the computer/components could fail, thus losing data. There were very few other answers which gained the mark. Most thought that the computer itself would be in danger of getting wet or that the system could not be used if there were people in the pool. Very few mentioned that sensors and connectors needed to be waterproof nor talked about maintenance of the system. A significant number stated that set up and/or equipment costs would be high or that “water and electricity don’t mix”, repeating a statement similar to part a).
- (c) This question was poorly answered with few candidates having any clear idea what to do with the data. Most candidates repeated what was given in the question – the fact that the pool was to be monitored. Very few gained more than two marks and these usually came from “use in a spreadsheet/database” and then “to create a graph/table”. Very few candidates referred to “how to use the data” to control what was going on in the pool i.e. heating, cleanliness. Too many candidates were interested in the school setting up projects/ experiments with the pool water to see if it was dirty.

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- (d) There were very few full marks for this part of the question. It seems that when some candidates see the word sensor they write down the first one they can think of, while others make up some new kinds of sensors e.g. wall, dirt, arm, remote. Most candidates failed to relate the sensor to the robot and the pool. Even when the correct sensor was identified the explanation that went alongside did not necessarily relate to what actually occurred e.g. a touch sensor so that when the robot touches the wall, the wall would push it away.
- 10) (a) This question was well answered with most candidates getting two or three marks. A significant number failed to address the email in any way before sending it. A few candidates described how the email message would be transmitted.
- (b) Most candidates gained at least one mark for this part of the question with several gaining both marks. Many thought that it was the transmission speed that was important e.g. gets there instantly, quicker than post. Other inappropriate answers involved the item not being lost or crumpled.
- 11) Most candidates scored the mark on this question, but the confusion between verify and validate was still evident and a significant number of students still feel it is the user learning the password or the computer is checking that the “right” person is changing the password rather than the computer verifying it.
- 12) (a) On average candidates obtained about half marks. This may have been because text was the answer to three of the fields. Very few scored full marks. There were some very interesting spellings of the words, especially since two of them were given.
- (b) (i) Many candidates gained the mark for this part, although, because there was such a variety of answers, it gave the impression of guessing.
- (ii) Candidates had limited success with this part of the question. Some candidates achieved this mark although the key term of “unique” was often not used, with variations being applied e.g. everyone’s different.
- (c) The vast majority knew that this was a check of some kind and gained one mark. A large number of students thought it was sufficient to say that the data was “correct”.
- (d) Candidates had some success with this part of the question. Some scored the mark for a valid check on the field even if they failed to score in part (c).

2357/02 (Higher)

General Comments

The paper produced the intended discrimination with various questions identifying higher grade candidates but allowing all candidates the opportunity to access all questions. The use of a graded response mark scheme for a number of questions produced the required discrimination allowing the questions to be accessible to weaker candidates while giving better candidates the opportunity to score a good range of marks. Candidates appeared to have been entered for the correct tier as there were very few very poor marks and few candidates left questions unanswered.

There was once again evidence that candidates failed to score marks because they had not been prepared for the theoretical aspects of work undertaken for their coursework. This was particularly noticeable in the questions about sensors and the use of the data. Nonsensical answers to the questions asking for sensors and their uses predominated with only a few candidates producing good answers. Centres are again reminded that candidates should be taught the specification content requirements as well as learning the use of the application tools.

Candidates are still, despite repeated warnings in these reports, using brand names and Centres are reminded that these do not gain credit.

- 1) (a) Most candidates achieved one mark for this question by stating “accessing a computer/files” but too many referred to files as though they were trying to access a filing cabinet rather than a computer system. To score the second mark the candidate needed to state “without permission” or “unauthorised”. A number of responses used the term “malicious” not realising that this does not imply that the access is unauthorised. Some candidates continued beyond what was required and mentioned what people might do to systems and the data obtained, this was not given credit.
- (b) Most candidates scored the mark for “...damaging/deleting files ...” The second mark seemed difficult to score as only a few candidates knew that a virus was a program. Even fewer stated viruses replicate or copy themselves. There were less ‘it can be caught like a cold’ type responses this year but a significant number of candidates still view computer viruses as infections or diseases.
- 2) (a) Responses to this question were disappointing. Very few candidates achieved full marks and very few seemed to get the data type for a telephone number correct despite the repeated references in these reports and in the coursework. A data type for the date was not often seen to be correctly stated: too many candidates gave the answer as numeric. It was disappointing to see the very poor spellings of the terms especially as two of them were given. The responses to this question also produced non-standard terms used for data types: the specification lays down what is expected.

- (b) (i) Most candidates achieved full marks for this part, however a significant number answered “available after school” perhaps believing that being available was “key” to them being picked for the team. This question was poorly answered.
 - ii) Most candidates achieved this mark although the key term of “unique” was often not used, with variations being applied “everyone’s different” etc. Surprisingly, many candidates scored the mark for this question despite not scoring the mark for part (i).
 - (c) The vast majority knew that validation was a check but again a significant number of candidates stated that it was to ensure that the data was “correct”. A number of candidates gave an example of a validation check without further explanation.
 - (d) This question was usually well answered although some candidates confused validation with verification. Many candidates ran the risk of failing to achieve the mark by giving one word answers e.g. “number” with no explanation or further comment. Many candidates gave a valid example of validation and most related this correctly to the example data given but a small number gave a general validation check that was not suitable for the Player ID field.
- 3) (a) This question was well answered with most candidates getting two or three marks. A significant number failed to address the email in any way before sending it and a number failed to actually send it. A few candidates erroneously described how the email message would be transmitted and some candidates started their responses by describing the production of the document despite the question stating that the article was already written.
- (b) Many inappropriate answers e.g. the item not being lost or crumpled were seen. Most candidates scored at least one mark for this part of the question with many gaining both marks. Many thought that it was the transmission speed that was important e.g. gets there instantly, quicker than post.
- 4) Most candidates scored the mark on this question, but the confusion between verify and validate was still seen too often and a significant number of candidates still state that it is the “user learning the password” or the computer is checking that the “right” person is changing the password.
- 5) (a) Most candidates correctly identified the different forms of data, analogue and digital, and the need to convert between them. However, too many only suggested that the interface was to “change” signals “to something the computer could understand”. A lot of candidates mentioned water and electricity here but failed to make any appropriate point: too many “blow up the computer” answers were seen.

- (b) Very few gained both marks for this part. The most common correct response stated that the computer/components could fail, thus losing data. Most thought that the computer itself would be in danger of getting wet or that the system could not be used if there were people in the pool. There was little mention neither of ensuring that sensors and connectors needed to be waterproof nor of maintenance of the system. A significant number stated that set up and/or equipment costs would be high or that “water and electricity don’t mix”, again the repeat of a statement similar to part a).
- (c) A poorly answered question with very few candidates achieving more than half marks. Most candidates referred to “how to use the data” in a spreadsheet/database and as such create a graph/table. Very few candidates referred to “how to use the data” to control what was going on in the pool i.e. heating, cleanliness. Too many candidates were interested in the school setting up projects/ experiments with the pool water to see if , for example, it was dirty. There were many responses such as “write a report” answers and vague references to “seeing the temperature etc” but no real development as to how the data could be used.
- (d) This question was very poorly answered and produced some ludicrous and nonsensical responses from candidates. It seems that some candidates just spot the word sensor and write down the first ones that come to mind, others make up some wonderful new kinds of sensors: mop, wall, dirt, arm, remote and so on. Most candidates failed to relate the sensor to the pool scenario e.g. altitude sensor was seen. It is disappointing to note that even when the correct sensor was identified the explanation was often nonsensical e.g. a touch sensor so that when the robot touches the wall the wall would push it away. Favourites amongst the examiners were the humidity sensor and the moisture sensor fitted to see if the water is too humid or too wet! This topic needs some careful teaching in Centres
- 6) This question gave all candidates the opportunity to show what they knew about a current ICT development and most candidates gained good marks. There were, however, many inaccurate references to “hacking fraud”, “stealing your card (over the Internet)”, and “your account would get hacked” which is disappointing and shows a lack of clarity in the teaching or simply a lack of teaching, it being assumed that candidates already know all about this topic from their own experience. Centres should address these areas of the specification in the same way as others i.e. teach it properly. Some candidates answered this question in general terms of using the Internet instead of reading the question carefully and thus identifying the two key words “security” and “convenience”.
- 7) This was very poorly answered despite similar questions appearing in past examination series. Many candidates put answers in the wrong section. Documentation does not seem to have been taught by most Centres despite the requirement for it in their project work and it being clearly part of the Systems Tasks and Software specification content.

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- (a) Many responses were poorly expressed but most candidates suggested that there needed to be a record of work done. A common response was that proof of development/ownership could be demonstrated. Surprisingly few candidates wrote of providing the user with help and/or installation/usage instructions. A significant number of candidates produced vague answers such as "If Karen needed to do the work again".
- (b) This question was poorly answered with most marks being achieved for a version of "screen dumps". There was little reference to testing in this part of the question and there were many vague references made to feedback.
- 8) Despite similar questions in past examination series, this question was again very poorly answered. Most candidates wrote vaguely about the advantages of using ICT to design the room rather than referring to the specific features of CAD software. Most candidates referred to general aspects of software such as being able to "edit", "print", "save" etc which do not gain credit.
- 9) A significant number of candidates wrote vaguely about ICT and failed to link it with the world of work and some candidates linked it only to their own work. Inevitably, this meant scoring only a few marks out of those available. Most marks were gained by reference to improved presentation and accuracy of work, health & safety aspects and the implications of improved communications. As is seen with most 'Discuss' questions there were many unqualified points and little discussion or elaboration of the points.
- 10) Most candidates knew what media was available, but a significant number did not go on to discuss the advantages or disadvantages so failed to score marks. Also, a significant number of candidates wrote about the advantages and disadvantages of printing out the records on paper. Some candidates obviously did not read the question and gave responses such as "database", "spreadsheet" and then discussed the merits of spreadsheets/databases as backups. Some wrote about backups in general terms. It is interesting to note that when viruses appeared they were only ever given in reference to floppy disks. Other responses were too vague e.g. 'save it on disk'. Many candidates are not precise enough in their descriptions of storage capacity with "loads of data" and "not much space" being common phrases. Very few candidates offered any comparison of storage capacity.

2359/01 (Foundation)

General Comments

Candidates did not perform as well as expected on this paper. There were more questions left unanswered by candidates than in previous examination series. Most candidates were able to satisfactorily answer the questions in the early part of the paper but there was a noticeable reduction in the quality of responses towards the end of the paper. It was disappointing to see the lack of understanding of systems analysis considering this forms a large part of the full course specification and is such an integral part of the full course coursework.

Comments on Individual Questions

- 1) Candidates did fairly well on this question. Most candidates achieved at least one mark.
- 2) Many candidates scored full marks and where they did not it was due to the interchanging of database and spreadsheet.
- 3) Most candidates did well with this question but a common trap that candidates fell into was the mistaken impression that a Graphical User interface used a graphics tablet.
- 4) This question was usually well answered though a number of candidates gave the answer 'virus checkers'.
- 5) This question produced a full range of marks. A disappointing number of candidates responded with three batch processing answers.
- 6) Most candidates scored some marks, although few managed full marks. A small minority of candidates confused RAM with ROM.
- 7) Few candidates achieved more than one mark. Most found it difficult to identify specific items of data giving only general descriptions of what might be found on the card such as 'personal details'.
- 8)
 - (a) This question produced a surprisingly high number of weak answers. Candidates found it difficult to articulate their answers.
 - (b) Candidates, again, found it difficult expressing themselves. Many suggested "you might find it difficult to get the information you want" without saying why.
 - (c) Candidates often gave speed as an answer without qualifying this response.

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- (d) Most candidates scored the mark for this question although a surprising number thought that a floppy disk was capable of storing large multimedia files.
- 9) (a) This question was not answered well. Many candidates answered that “you could look in books or on the Internet.”
- (b) Candidates often gave answers relating to speed. Few candidates were able to score any marks.
- 10 Most candidates managed to score at least two marks on this question with very few scoring less than this. Quite a large number of candidates stated that option A should come first or second on the list.
- 11 Not many candidates seemed to know any of the requirements of the Act.
- 12 (a) This question was answered very poorly. Candidates often gave examples of input and output devices clearly not having read the question fully.
- (b) Very few candidates gained marks on this question. They seemed to ignore the question, which required items other than contact details, and responded with answers such as ‘name’, ‘address’, ‘phone number’ and the like.
- 13 (a)(i) This question was poorly answered and candidates gave answers which did not relate to the recording of data in the ‘vehicle type column’
- (ii) As a result of poor answers to part (i) candidates found it difficult to answer correctly in this part. Few candidates scored marks here.
- (b) Most candidates failed to give the correct answer with various alternatives being ‘spell checking’, ‘data checking’ and ‘verification’.
- (c) A surprisingly large number of candidates failed to gain any marks for this question.
- 14 Candidates gave a variety of answers but, unfortunately, most of the answers could equally apply to the manual system and thus did not score.
- 15 (a) Candidates showed a lack of understanding of design and were unable to state the tasks carried out. A large number of candidates just wrote out the stages in the systems cycle.
- (b) Candidates were often unable to name the stage but managed to gain marks by describing a step within the stage.

2359/02 (Higher)

It was still apparent that areas of the specification are not taught in sufficient detail to allow candidates to achieve their full potential in this Unit.

These are matters which have been repeatedly raised, and emphasised, in the Chief Examiner's report to Centres over many examination series. OCR also provides a series of INSET/training sessions aimed at these areas to raise teachers' awareness of the need to fully address all sections of the specification in their schemes of work. It is hoped that teachers take advantage of these and of the comments in this Report to Centres.

General Comments

- 1) There were few good answers. Quite a large number of candidates seemed to concentrate on the stock control aspect of the question. Some candidates described parallel running without explaining why it is chosen.
- 2) Most candidates gained 2 or more marks on this question.
- 3) This question was answered quite well although some candidates seemed to still be under the impression that banks must have permission from the customer to store data/pass on data and produced bland phrases such as "data must not be passed on" with no further qualification.
- 4) (a) Many candidates missed the point of this question providing answers which were lists of input and output devices. Very few candidates referred to alternative hardware and their features.
(b) This question was poorly answered. Many candidates, despite the stem of the question, seemed insistent on giving actual contact details such as names, phone numbers, addresses and the like.
- 5) (a)(i) This was not as well answered as expected. Many candidates missed the point of the question giving answers such as putting the data in alphabetical order or putting the data in once and doing a tally.
(ii) Many candidates failed to gain marks on this part of the question.
(b) A number of answers related to verification or spell checking were seen although the majority of candidates answered this question correctly
(c) Many candidates gained both marks, most gained at least one mark but there were some answers which did not relate to the question including the use of field names from the data capture form.
- 6 (a) This question was not well answered. Candidates did not seem to have any knowledge of the definition of abnormal data and tried to redefine the term in their own words and not in an ICT situation. A number confused abnormal with extreme.

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- (b) This question was also not as well answered as expected. Most candidates missed the point about the data being at the extremes of a data range.
 - (c) This was fairly well answered although a number of candidates thought that 7 and -1 were examples of extreme data in this context.
- 7) Many candidates were able to gain marks by mentioning the features of a GUI but quite a number were then unable to gain extra marks for explaining why it is therefore easier to use.
- 8) (a) Most candidates managed to score at least one mark.
- (b) Many candidates were unable to describe the services offered specifically by the ISP. Quite a number of candidates listed general aspects of using the Internet such as online shopping and online banking.
- 9) Candidates did well on this question.
- 10) (a) Very few candidates answered this question well. Quite a number of candidates gave the stages in the development of a system such as analysis, design, implementation etc. without focussing on the design stage as required by the question.
- (b) Most candidates managed to score at least one mark and many scored a second for expanding on the naming of the stage.
- 11) This question was very poorly answered with the majority of candidates unable to gain one mark. Quite a number of candidates just repeated the stages of the development required for question 10 but using the phrase 'expert system' rather than new ICT system.
- 12) Candidates seemed to have little trouble identifying methods but were unable to go on and discuss them. Very few were able to make a coherent argument outlining the advantages or disadvantages.

2358 (Short Course Projects 1a/1b)

General Comments

Where Centres failed to apply the assessment specification accurately it was mainly in the assessment of Project 1a. There was an improvement in the number of Centres who are encouraging their candidates to annotate their work. There was also an improvement in the number of Centres indicating whereabouts in the work the evidence for meeting the criteria could be found. However, there is still a large number of Centres who are still not taking advantage of the Teacher's Guide published by OCR as well as this and previous reports on the requirements of the specification. They all contain good advice and, if followed, would remove many of the problems apparently experienced by Centres when assessing the work. The advice relating to the new Project 1a is particularly valuable. However, it should be read in conjunction with the current specification, particularly the section on notes for guidance. The OCR training courses also provide opportunities for individual Centres to raise points specific to their own candidates' work.

Centres were much better in their administration than last summer and most did not have to be reminded to provide the Centre Authentication form signed by its teacher/assessors.

There were, however, a small number of Centres failing to send coursework summary forms. This failure delays the whole moderation process and can result in Centres failing to receive their results on time. It is in the Centre's own interests to adhere to deadlines and to also provide the coursework sample within the 3-day deadline.

Again, the lack of internal moderation carried out in a minority of Centres caused problems. Centres are reminded that they have a responsibility to carry out internal moderation of their marking of the coursework. In future sessions moderators will be required to return the work to Centres and ask them to re-mark the work. This will definitely result in a delay in publication of results to those Centres.

Project 1a

It was quite clear that some Centres are still not heeding the advice given in the Teacher's Guide and the current specification. Under the scheme of assessment, candidates fail to get even the lowest ranges of marks if they do not incorporate information in their final document which originates from non-IT sources and at least one IT source.

The requirement for number is also mandatory at low mark levels.

One other major failing was, once again, the lack of evidence of number in the work of some candidates. As has been stated in many previous reports, the rationale behind the use of text, images and number is that in any given document the formatting of each of these is done differently. There is a requirement that candidates are aware that numbers are formatted differently to the other two forms of information. One example is the use of currency, where each one would have a currency symbol in front of it and each number would have the decimal point in line with its predecessor etc. An awareness by the candidates of the need for the different formatting requirements of numbers is all that is required. A number of candidates are still using phone numbers as their evidence of

number. Telephone numbers do not meet the criterion for any skill which mentions number. Numbers are those which can, or have been, mathematically manipulated. Where data types such as dates or times are used they cannot have dashes or the word to (as in opening times) as this makes them text. Graphs can be construed as images unless the manner in which they are produced is fully documented. Candidates cannot base their use of number on graphs if they do not show the table of numbers on which their graph is based. Some candidates copied and pasted graphs, from their sources, which were really images. Any confusion is easily removed if the original numbers are included and the method of graph production is demonstrated. Again, work lacking evidence of a list of numbers led to many marks being lost. The origin of the numbers must also be evidenced. Best practice is to show the original numbers and then incorporate them into a table suitably formatted.

Yet again, Centres seemed to struggle with the concept of purpose. As it mentions in the Teacher's Guide the purpose is the reason for doing the work and must include the reason as well as identification of an audience and a description of the information to be communicated. Too many Centres are allowing their candidates to seemingly pick a topic of their own choice such as their favourite football team, pop group, or game platform etc. Quite often there is not a good reason for doing this. The identification of the audience is often far too vague. People in general or fans of the football club, pop group etc. are not specific enough for this purpose. Candidates who are successful tend to be those who select a narrow target audience whose features can be described appropriately. For marks higher than 7 candidates must relate the development of the work to this audience. This is easier to do when the target audience is narrow. As stated in the Teacher's Guide, development must be evidenced by printouts of at least three different stages of the development. Where candidates are producing a significant piece of work there will obviously be more stages of development. The audience must be referred to at each stage of development. The purpose of the work is the reason for producing the documents and should not be construed as the task itself.

The statement of a purpose is a requirement of the lower mark ranges on the scheme of assessment and failure to provide a reasonable purpose could lead to a large reduction in marks. Project 1a is similar to Project 1b in as much as all criteria must be met in a mark range for that mark to be awarded. Most candidates who were successful concentrated on identifying an audience, usually a specific age group: the purpose of the work being to attract that type of audience.

Many candidates still failed to provide evidence that they have collected, and then incorporated in their final products, information from non-IT sources. The evidence that non-IT sources have been collected is the inclusion of the original source or where this is impractical a photocopy. However, it is not sufficient to just collect information from non-IT sources. Candidates must take this information and incorporate it into their work, i.e. the final product. Some Centres mistakenly think that the reference in the specification and in the Teacher's Guide to a 'piece of work' includes their documentation. It does not. The piece of work referred to is the brochure or presentation they are producing for their end product. The lack of description, including screenshots, of how information from both IT and non-IT sources was incorporated into their final brochures or presentations also led to a reduction in marks. It is not the role of the moderator to try to find an image, say, in a final booklet which matches that which has been collected earlier in the work by the candidate. Failure of the candidate to show this will result in loss of marks.

Many Centres failed to realise that information has to be produced from a minimum of two (2) non-IT sources which must be included in their final booklet or slide show for all but the lowest mark ranges. Even at the lowest mark ranges candidates must show information from a number of non-IT sources although information from only one of these is required to be incorporated into their final piece. For marks above 13 information from a minimum of two (2) different IT sources must be included in the booklet or presentation. The Internet is considered to be only one IT source. It is not sufficient for candidates to look at the Internet or CD ROMs, or in magazines, books and newspapers for 'research' purposes. They must actually incorporate a minimum of the four (4) pieces of information (one from each source, two IT and two non-IT) into their final booklet/presentation and at least one piece should be numeric, at least one should be text and at least one should be an image. These sources and how the information was acquired from them must be shown.

Centres are reminded that for marks above 10 candidates must produce a significant piece of work. This means that a booklet or website of 8 pages, or a presentation of 8 slides is required as a minimum. Some Centres still submitted the business oriented task of business card, letterheads, leaflets etc. This is not a significant piece of work.

Other criteria which seem to be misunderstood are those relating to hyperlinks and proof reading. To gain marks in the 17-19 range candidates must match their selection of hyperlinks to follow to their purpose and audience. Many Centres seemed to think that marks could be awarded if there was evidence that candidates had followed hyperlinks even if they had not given reasons why these would provide information suitable for their audience. Similarly, having found information as a result of following these links, they must go on and explain why some of this information would be suitable for their audience and some would not. Finally they must use the information which they have found suitable. Too many candidates are given credit at this level and the 8-10 range for making banal comments such as 'I chose this because it suited my audience'. Reasons why or how it matches their audience are required. Proof reading is checking the accuracy of the candidate's final piece of work. Any remaining spelling, grammatical and factual errors should be picked up at this stage. Some Centres think that it is actually a read through of the work from an aesthetic point of view. This is not the case. At the 20-21 mark range evidence of proof reading and spell checking must be provided. Finally, it is not sufficient for proof readers to simply sign the work off saying they didn't find any mistakes.

Once again, it appeared that some Centres allowed candidates to spend a lot of time producing a booklet and then, at the end of this process, tried to identify the skills which had been awarded. A more structured approach is suggested whereby candidates are advised how and where they can obtain credit for skills. One simple way of structuring the work is to allow candidates to produce between two and four pages of a booklet confining themselves to the use of in-house clipart and scanned images as their pictures. The candidates can then complete their booklets by moving on to use the Internet as a source of further information. At the other end of the spectrum, as GCSE candidates must work independently, a structure which involves worksheets which clearly define each step in the process and dictate to the candidate what they should do is also not advisable. Such an approach, or other on-line methods such as writing frames, can limit a candidate's ability to produce their own work. An increase in the

tendency for some Centres to produce prescriptive guidelines has been noticed. It is imperative that candidates are not given sentences to complete. The work must be the candidate's own.

For the additional skills marks Centres seemed to think that to write about these skills in the abstract was sufficient, or more worryingly, to copy phrases from text books was acceptable. The notes for guidance in the specification make it quite clear that the majority of these skills must be referenced from the point of view of the candidates' own experiences. A common failing, which prevents candidates from gaining any of these marks, is the lack of evidence of backups having been made. Another worrying aspect is the lack of detail in many of the candidates' statements. Some Centres seemed to think that writing a few words on each aspect was sufficient. Finally, a number of Centres seem to confuse errors with problems. Many candidates failed to gain credit for the additional skills as they referred to getting online help to help them with the features of a software package. Examples such as candidates explaining that they did not know how to crop an image, for example, so they went to the online help to find out. This aspect is not an error. Candidates are required to produce screenshots showing error messages from the system to reinforce their description of error handling.

Project 1b

A number of Centres are still not following the requirements of the specification that state that in order for a candidate to be awarded a mark within a given mark range they must match all the criteria within that mark range.

Comments on Individual Strands

Data Handling

Centres are reminded that In order for a candidate to be awarded a mark within a given mark range they must match all the criteria within that mark range. A number of Centres disregarded this requirement and had their marks reduced accordingly. In this specification, the criteria are hierarchical and so if a candidate fails to verify their database, for example, they are going to get very low marks no matter how many of the higher criteria they have met.

There were still a small number of Centres awarding marks for this strand despite there being little evidence of searches (interrogation) performed on the database used. This leads to a mark of zero being awarded. The evidence required for this is a printout of the matching records.

For 14 to 16 marks to be awarded candidates must provide evidence of using a range of sources. They must also give reasons for selecting the data for inclusion in the database. The Teacher's Guide for the specification explains in detail what is required. *Reasons for choosing fields* cannot be based on the proposition that these were what were required by a 'user'. It can be a list of possible questions (queries) which the database is required to answer which the candidate uses to deduce the fields required to answer such questions. It could be a survey of a number of possible users as to what fields would be needed and then deducing from the response what fields are required. Some Centres feel it is acceptable evidence for candidates to show evidence of their

sources as being the front page of the magazine they used. It is not. Candidates must show the actual data highlighted in the magazines or highlighted in the printouts of the websites. This must then be clearly present in their data capture form and subsequently in their database.

For marks above 16 candidates must use Boolean operands in their searches. The criterion refers to complex searches (plural) and so requires an absolute minimum of two complex searches. A minimum of two different Boolean operands must be used.

Some Centres are still confused over the requirements for validation. Proof that validation has worked is required. This is done by producing screen dumps showing error messages being produced as a result of the candidates setting up their own routines. The entry of text into a numeric field does not count; neither does the designing of field types which limit data entry. The criterion requires the candidates to write their *own* validation routines. More than one validation routine must be evidenced. Printouts of the error messages showing that these routines worked are essential for this mark range to be obtained.

For marks above 19 candidates must describe their choice of software in terms of the features required to solve the problem and compare it with an alternative piece of software. Many candidates lose marks because they give a list of features which are not required by the solution or fail to give a list of features required by the solution or, indeed, give a list of features required by the solution but are equally available in the package they are rejecting. It is apparent that many candidates have little experience of using alternative data handling packages to the one they used to create their database.

For marks in the highest ranges, candidates are expected to give reasons why they have chosen the fields included in their database but left out others. They will also need to give reasons for their choice of field types and explain their choice of field lengths. A number of Centres think that it is sufficient for candidates to list these rather than give reasons for their choice. This is not acceptable.

For the highest mark range of 26-28 marks, the required output must be stated. This must also be in terms of the format of the output. As one of the criteria is to comment on how easy it was to produce tables and graphs, candidates must obviously stipulate these as being part of the required output and then produce this output. This will usually be the output from a list of queries which the candidate surmises they will use to test their database. Candidates must relate all the reasons for the choice of all the various features listed in the 26 to 28 mark range to this required output.

It is to be remembered by Centres that only the most gifted of students should be awarded marks in this range as it is intended to be a true discriminator for grade A/A* candidates.

Modelling

More Centres are now aware of what constitutes a complex model.

Centres are still using writing frames as prompt sheets for candidates and this often leads to candidates being unable to truly explore the model.

Validity of a model is also still causing problems. Candidates are required to compare the model with a real life situation in order to secure credit. Some candidates failed to design a complex model but were still awarded marks above 19. It is not sufficient to make a design and then go on to create a complex model; the original design should be complex.

A number of Centres fail to understand the requirement for justifying the choice of software. Candidates should define their problem, and then produce a list of software features required to solve the problem, followed by a description of their choice of software and how well it meets the required features. The description of how they created their spreadsheet should contain a number of screenshots illustrating how these features were used.

For all mark ranges above 7 candidates must make predictions. They must then go on to produce before and after printouts of their model showing whether they were accurate or otherwise in these predictions. For marks above 19 candidates must make specific predictions. It is not sufficient to write about how certain values will increase or decrease. The actual value of the increase or decrease must be predicted.

Measuring

Too many Centres regard this as an easy option but should remember that this strand requires the same level of detail in the documentation as any other strand. The candidates' reports must still match the specification criteria in order to obtain marks. Many ICT departments allow other departments to teach this strand and then mark the outcomes themselves although the outcomes obviously cover other requirements more than ICT. Centres are reminded that 18 hours should be spent on the teaching of and production of Project 1b.

Control

This strand still causes some Centres some problems. The advice in the Teacher's Guide clearly identifies the need for equipment to be set up by an individual, not a team, including the setting up of two different types of sensor – not contact switches. These must all be connected by the candidate to a computer through some form of interface. The creation of this system must be evidenced and photographs of the stages of creation are the best way of doing this.

Candidates must realise that they have to annotate their programs showing how they have used precision and what would have happened if they had not. Evaluations which refer to their use of precision are not the same thing.

Finally, feedback is defined as the output of a system affecting the input of a system. It is not considered to be the reaction to inputs.

2360 Project 2

As in previous years, the entry for this Unit in January was small with just 11 Centres and a total entry of 56 candidates.

The work seen was generally not up to the Centres' assessments, with many examples of marks being awarded for evidence that has consistently been identified as unacceptable. Centres are reminded that specific feedback is given following moderation in the Moderator's Report that is returned to the Centre after the moderation is complete. Centres should take heed of advice given here. It is possible that previous Moderators Reports may also be reviewed to determine whether a scaling should be applied in a subsequent moderation period, so it is important that the advice given is properly understood. If you have not received the Moderator's Report from a previous session, please consult your Examinations Officer in the first instance, and then contact OCR for copies. Further (specific) feedback can also be obtained through the use of the Coursework Consultancy service available from Cambridge Assessment.

Specific comments on the sections.

Analysis

Candidates were not awarded marks where there was:

- 1:
 - a) Too little evidence of the problem being described.
 - b) A scenario described, but no actual problem. "For my database project..."
 - c) The extra complexity to meet the requirements for 4 marks added in as part of the solution rather than being part of the problem.
- 2: No supporting evidence that the information had been collected and in many cases, the acceptance of work that had been manufactured in an attempt to meet the requirement.
- 3: Only vague comments given about input, processing and output which were little more than general theory. (It is here that the candidate needs to identify a range of actual tasks that the system performs. This then means that later, in the testing section, they can use this as a basis for their testing.)

Design

There should be at least one design for every relevant part, identified by the candidate, of the system being developed to be awarded one mark in D1, D2 or D3. Appropriate alternatives are required for 2 marks, with a reasoned choice being made for 3 marks. There must also be a progression in the design process. E.g, having chosen the data structure design, then the user interfaces must match that design. It is not acceptable to design a user interface for each data structures designed, and then choose a data structure and consequently its related user interface.

Software packages considered should be those that the candidate might use to implement their system and alternatives should be appropriate. This does not include such items as the operating system or virus checking packages, which are obviously needed, but which are not integral to the task in hand.

Implementation

If candidates have made a reasoned choice of specific software package after they have designed the various parts of their system, then at this point they may well find that features they require do not allow them to achieve exactly what they had planned or perhaps they can actually do more. This process will then lead naturally to changes being possible at this point as the chosen package may not offer all the features required, or more features initially not considered necessary by the candidate. Contrived changes or changes that have actually been made during the design process do not meet the requirements for more than 2 marks in either I1 or I2.

Testing

As was stated earlier, to be awarded more than 2 marks for T1, there needs to be evidence of “thorough testing”. This is done by demonstrating that the system does at least all, that they have stated, the user requires in the Analysis section.

User Documentation

In UD3, errors and their avoidance does not mean that the candidate has to explain what happens when error messages are produced by the software package used or the operating system e.g. “Run time” errors or “Printer out of paper”. Rather, these are messages produced by such things as validation checks that they have built into the system for the user.

Evaluation

For more than 1 mark, there is a requirement for the candidate to relate any comment made here to the list of user requirements given in the Analysis section. It is not possible to accept that any real in depth evaluation can be done if there is little or no evidence that the system has been tested.

**General Certificate of Secondary Education
ICT A (1094/1994)
January 2007 Assessment Series**

Unit Threshold Marks

Unit		Maximum Mark	a*	a	b	c	d	e	f	g	u
2357F	Raw	60				41	37	34	31	28	
	UMS	55				48	40	32	24	16	0
2357H	Raw	60	43	38	33	28	22	19			0
	UMS	80	72	64	56	48	40	32			0
2358	Raw	60	57	51	42	34	28	22	16	10	0
	UMS	120	108	96	84	72	60	48	36	24	0
2359F	Raw	60				32	28	24	20	16	0
	UMS	55				48	40	32	24	16	0
2359H	Raw	60	38	33	28	23	18	15			0
	UMS	80	72	64	56	48	40	32			0
2360	Raw	60	53	44	35	26	22	19	16	13	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	2.0	10.6	38.0	65.3	82.1	93.2	98.0	100.0	100.0	457
1994	5.6	19.4	55.6	81.9	95.8	100.0	100.0	100.0	100.0	195

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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