

Information & Communication Technology A

General Certificate of Secondary Education **GCSE 1994**

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

Report on the Units

June 2006

1994/1094/MS/R/06

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The mark schemes are 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.

The reports on the Examinations provide information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Mark schemes and Reports should be read in conjunction with the published question papers.

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GCSE Information and Communication Technology Specification A

Chief Examiner's Report

Units 2357 and 2358 comprise the Short Course (Specification 1094). Units 2359 and 2360, together with the Short Course units, comprise the Full Course (Specification 1994).

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

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

Centres are reminded that candidates should use generic terms such as spreadsheet, DTP, word processor etc in this specification as brand names do not gain credit.

Graded response mark schemes were used in this specification.

Centres are directed towards the published mark schemes of each unit for more details of the actual graded mark schemes used.

Centres are 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 discouraged.

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

The moderation of both Units was hampered by the delays in sending requested work to moderators. Centres are asked to ensure that moderator's requests are dealt with promptly.

Centres are also 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/assessor, 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

Incomplete or inaccurate documentation received from Centres delays the whole moderation process and may result in delays in the issuing of results to those Centres that do not provide moderators with the correct paperwork. It is of particular concern in Unit 2358 (Short Course coursework, Projects 1a and 1b) where there are more choices of strands and 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.

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

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

2357F (2357/01 Foundation Tier)

General Comments

The paper performed well. There seemed to be no problems with the time allocation, all candidates being able to produce a full set of responses. Once again candidates seem to have been entered for the correct level. Scripts displayed evidence that the mark was very definitely associated with the candidates' abilities in the subject rather than their abilities, or lack of, with written English.

As is reported each year, candidates still answer with "quicker", "cheaper", or "efficient" but these gain no credit unless some description follows explaining the comparison.

Brand names appeared again, despite warnings, but once again did not gain credit. A new one was "Google" used when "a search engine" would have gained the mark.

Comments on Individual Questions

- 1 This was answered quite well. Most candidates obtained at least eight marks. The components in the photograph were usually identified correctly but not always put into the right input/output category.
- 2 Many candidates gained two or more marks for this question. The last part was most commonly answered incorrectly. This question, and question 5, showed that candidates did not appreciate the differences in meanings of terms used in a database.
- 3 (a) If candidates understood what was required of the question, they quickly obtained four marks for having columns with headings for cars, trucks, vans and other vehicles. Those who went on to gain full marks appreciated that the activity went on for a week, and so included a time element and spaces for each of these. Some candidates drew bar charts or pictures of video cameras and gained no marks.
(b) Most candidates obtained a mark for mentioning tallying, or marking a tick for each car. Fewer gained a second mark – those who did usually got it for describing how the total was reached.
- 4 It is still surprising how many candidates fail to write down a cell reference correctly. When they did, candidates got this question right. Candidates are expected to write a cell reference as letter followed by number, e.g. D3, and without any punctuation, or using the R1C1 format.
When they knew the meaning of the term cell reference, candidates answered parts (a), (b) and (e) well. They had difficulty in identifying where the formula in part (c) was placed. Part (d) was done surprisingly badly. Very few candidates used the function SUM and the correct range. A significant number obtained one mark for writing =D3+D4+D5+D6
- 5 One mark was most common for this question. Candidates quoted that it was easier to search for particular records, but rarely any more than that. Candidates gave vague answers such as it is easier, quicker, and neater but gained no marks for these. Very few appreciated that unless Katherine had a very large circle of friends a paper-based system was adequate. The unacceptable "cannot lose data" was quite common.

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- 6 (a) The data type grid was very badly done, with very few scoring more than one mark and a great many scoring zero.
- (b) On the whole candidates did not know the differences between the three terms. The same vague definition – data stored on a computer – appeared in all three sections. Candidates needed to indicate that a record was a collection of data about the same thing/person, a field was one of these items of data, and a file was a collection of these records. “Folders in Windows” was a common answer for files, and this did not get the mark.
- 7 (a) There were very few candidates who used the Repeat construct. A few gained one mark for writing down the expression in the square brackets twice. Many wrote it only once. As this did not complete the triangle they were awarded no marks.
- (b) Candidates made a better attempt at this part and a significant number gained two marks. Equally, a significant number gained one mark because they did not know their left from their right.
- 8 (a) Candidates who had used sensors answered this question well. Common sensors such as light and Ph gained the marks. Temperature sensor gained a mark, but heat did not. Other candidates guessed and made up names – such as pollution sensors.
- (b) Most candidates gained at least two marks for this part, accuracy, safety and not needing breaks being common correct answers.
- (c) This part was the worst-answered part of this question. Occasionally marks were stumbled upon: database; graph/chart/table; writing something (though far fewer mentioned this last one than one might have supposed). Brand names continue to appear in abundance and gained no credit
- 9 Some candidates made no reference to getting on-line so gained 0 marks but some did gain 2 or 3 marks. Searching for a cinema/cinema chain website gained credit, using a search engine, as well as booking tickets on-line were the common answers which gained marks. Brand names appeared here too, though less often. Very few mentioned email.
- 10 A high proportion of candidates put copyright into their answer, and although many did not seem totally happy with the meaning of the term they were awarded a mark. Few knew about royalties, being more concerned about company profits. Relatively few scored the point for “selling without permission”. Many thought that downloading was always illegal and virus infection was a common concern. Neither of these last two points gained a mark.

2357H (2357/02 Higher Tier)

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 again produced the required discrimination allowing better candidates to score a good range of marks, and also allowing the questions to be accessible to weaker candidates.

There was evidence that candidates failed to score marks because they had not been prepared for the theoretical aspects of work undertaken for their coursework. Centres are reminded that candidates should be taught the specification content requirements as well as learning the use of the application tools.

Comments on Individual Questions

- 1 This should have been an easy question in which to score three marks – especially as the question has appeared several times in different guises over the years. However, it was poorly answered with few candidates scoring more than a single mark. It appeared that candidates knew about the use of databases but did not know why they were used.

- 2 (a) This is a standard question about database structures and this aspect of databases features in Project 1b, Data Handling but it was very poorly answered. Most candidates simply did not know the answers although a few managed to score three marks, and some all four marks...the first two types being less often answered correctly than the last two.

- (b) This question was also poorly answered. It was disappointing that so few candidates could correctly state meaning of the terms in relation to databases. Most candidates did not know the differences between the three terms giving the same vague definition e.g. data stored on a computer or information about things for all three. Candidates needed to indicate that a record was a collection of data about the same thing/person, a field was one of these items of data, and a file was a collection of these records. “Folders in Windows”, documents all together” and “stored on disk” were common incorrect answers for files.

- 3 (a) Given that this is a question that regularly appears, it is very disappointing to note that this was, once again, poorly answered. There are clearly two lines for answers, two marks shown as available, and the most efficient answer is REPEAT 3. Most candidates attempted to draw the shape with combination of FORWARD and 120 written over and over – most did not even get the correct number of times this would be needed. This question is clearly based on a section of the specification and should have been better answered than it was.

- (b) This was much better answered with many candidates scoring both marks.

- 4 (a) This question was well answered with most candidates scoring both marks for suggesting sensible sensors.

- (b) This question was well answered by most candidates.

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- (c) This question allowed candidates to show their knowledge and understanding of ways to display the captured data and most candidates scored good marks. Many, however, despite the warning on the front of the paper, used brand names rather than generic terms for software and thus did not score the marks.
- 5 This question was well answered with many candidates scoring high marks. It was noted that some candidates failed to score marks because they repeated the same point e.g. look for times, look for films to see. The best answers described the use of the Internet in different ways: using a search engine to find some information, a visit to a specific website, the use of on-line systems to book tickets, and e.g. the use of email to request information or invite family members.
- 6 Most candidates correctly stated the copyright issues but few mentioned that permission is needed if the music is to be sold. Many candidates stated, incorrectly, that downloading was always illegal and virus infection was a common concern.
- 7 Candidates are expected to be aware of the uses and features of various applications and CAD is a typical application. It was disappointing, therefore to see so many candidates who clearly had not been taught nor had experience of CAD software. This question was badly answered even in comparison to the last time such a question appeared in this paper. Centres are expected to ensure that candidates know about such applications.
- 8 While it is apparent that candidates use email regularly, very few had any idea of how emails are sent and delivered. This question was poorly answered. Some candidates had so little knowledge of this that they created some strange suggestions e.g. 'it is added to all the others and then sent through the channel tunnel in a very big wire'!
- 10 This question was well answered. It was a question that most candidates could write something of merit. However, some candidates viewed robots in terms of Isaac Asimov's creations and suggested that "they might take over" in a malevolent fashion rather than concentrating on the replacement of human workforce personnel or the creation of employment in support areas.
- 11 This question should have been easy to answer, relating as it does, to the creation of a database such as for Unit 2358. However, few candidates accurately described the steps they would take to create a database. Many candidates stated the steps in the wrong order and few progressed beyond collecting data and creating some fields. There were very few descriptions of setting data/field types and creating validation routines. Verification was rarely mentioned. The creation and saving of queries for future use by the user was also rarely seen.

2359F (2359/01 FoundationTier)

General Comments

Most candidates attempted the majority of the questions and made a reasonable effort throughout the paper but many candidates performed disappointingly on a paper which allowed all candidates opportunities to display their knowledge. The majority of candidates failed to achieve even half marks.

It is disappointing to see so many candidates failing to answer questions which only require fairly basic technical knowledge. The majority of candidates appeared not to have even the most rudimentary grasp of technical terms.

The main points of misunderstanding on the part of the candidate are shown below. Where candidates performed as expected the question has not been included.

Comments on Individual Questions

- 1 Generally this was well-answered by most candidates but a common incorrect answer was databases.

- 2 This question was well-answered with many candidates achieving both marks.

- 3 Most candidates answered this well.

- 4 Many candidates did not score both marks. "plotter" and "mail merge" were often given, incorrectly, as answers and very few chose "OCR".

- 5 (a) Most candidates could define RAM.

- (b) Most candidates could not explain what RAM is used for. Many candidates just described it.

- (c) Most candidates could define ROM.

- (d) Most candidates could not explain what ROM is used for. Many candidates just described it.

- 6 (a) This question was reasonably well answered.

- (b) Candidates were unable to say why icons are used and very few gained any marks at all.

- (c) Most candidates gained a mark for "mouse" but a large number incorrectly put "scanner" for their other answer.

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- 7 (a) Many candidates confused encoding with PIN codes or encryption. This question was not well answered.
- (b)(i) Very few identified validation and even fewer could explain its purpose. There were many answers along the lines of 'to make sure it is correct' for part (ii).
- (ii)
- (c) The vast majority of candidates appeared to have little knowledge of methods of implementation. Many referred to an aspect of training.
- 8 (a) Candidates provided some good responses to this question although few achieved four marks. "Backups" and "passwords" were the most common answers. Many thought that encryption would prevent data being lost or corrupted.
- (b) Not many candidates provided a good response. Many candidates stated that the data was coded.
- (c) This question was quite well answered.
- 9 Very few candidates appeared to have any understanding of real time processing or batch processing.
- 10 It appeared that most candidates had little or no understanding of the Computer Misuse Act. Many candidates gave pornography and copyright as answers.
- 11 Candidates very rarely gained full marks although 3 or 4 marks were common. It was surprising how many candidates failed to put a tick in each row.
- 12 (a) This was reasonably well answered with most candidates scoring 2 or 3 marks.
- (b) This was poorly answered. Many candidates were under the impression that the sensors were in control rather than the microprocessor. Many showed little understanding of control systems.
- 13 (a) This question was usually well answered with candidates referring to the PIN being entered and then checked as well as money having to be transferred.
- (b) This question was not as well answered as candidates often failed to address the question which asked for an advantage to the *supermarket*.
- 14 Many candidates picked up 2 marks for defining Local Area Network and Wide Area Network but few other responses of merit were noticed.

2359H (2359/02 HigherTier)

General Comments

It was pleasing to see that the final question on the paper was universally attempted as this has not always been the case in previous sessions. It was clear that some candidates are not adequately prepared for this type of question and many were unable to access the expansion marks as they merely gave up to eight points and did not expand upon them. The main confusions were in giving several examples of crimes that are all concerned with unauthorised access (e.g. hacking, accessing personal data, accessing government files, accessing bank data). Many candidates went into considerable depth about copying DVDs and CDs but these crimes existed before computers became commonplace and are merely made simpler with computers. Paedophilia was often given as a new crime rather being on the increase as a result of easy access to personal information.

There seemed to be a general lack of idle scribbling and graffiti and there seemed to be fewer 'no responses' than in previous sessions.

Comments on Individual Questions

- 1 This question was not well answered. Most candidates do not know the meaning of "archive". Most made an attempt at guessing that it is something to do with "storing data on a different medium" but did not know the reasons behind the idea of archiving. Most candidates scored at least one mark on this question. Incorrect answers tended to refer to copies as backups or data that is saved.
- 2 Most candidates had some knowledge of real time and batch processing but most candidates were unable to explain the differences. Many mentioned "some kind of difficulty that planes can get into" but never quite answered the question. One candidate wrote "in case pilot have to switch off and drive". For many candidates on this question it was a matter of not being able to express their ideas correctly. Many answers were far too vague to gain marks
- 3 Many answers referred to breaches of copyright. Most candidates scored at least one mark, "DOWNLOADING illegally" was a popular (wrong) answer, quite a few mentioned stealing, fraud, sending a virus, copyright etc so not many scored the maximum two marks. This is such an easy question to prepare for as learning the provisions of the Act are not onerous.
- 4 Mostly candidates answered this question very well.
- 5 (a) Candidates generally scored well on this but there were many incorrect answers such as 'heat sensor' and 'converter'.

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- (b) Many candidates believed that the sensors were used to switch on/off the environmental controls. Also, there were relatively few candidates that referred to the need to compare information with pre-set limits. The watering aspects of the control system led to erroneous answers. Some strange answers were given including "rain gauge", "rain stimulator", "water fountain", "programmed water tank", "watering machine", "oxygen tank", "electronically tagging procedure for plants", and "bulb-something to give out carbon dioxide".

The second part of this question was well attempted but most did not refer to "continuously", or "constantly". This question and its variants have appeared a number of times and should have been easy enough to answer. Too many candidates used the wrong terminology. In part (b) all too often it was a lack of precision that caused the failure to gain marks e.g. 'The sensor reads the temperature and turns on the heaters.', 'The sensor sends a message to the computer when it gets too hot.'

- 6 Many candidates thought that the magnetic strip held details of bank accounts including how much money is in the account. Comments such as 'the money is taken off the card' were commonly seen. This question was very relevant to candidates' own experiences as most must have been to shop at supermarkets with families. This was well answered generally but a few candidates confused EFT with EFTPOS and gave long descriptions of controlling stock levels. A significant minority of candidates wrote about cashback. For the second part of the question, one cannot help but be faced with images of poor long-suffering people dragging themselves to the bank laden with bundles of cheques. "More reliable" was a popular answer given here. General concepts understood - it is part of life experience. A number of candidates could not differentiate EPOS from EFT.
- 7 Many candidates seem to believe that computers on a LAN must be connected with copper cables. Most candidates seen scored 2 marks for the small area/large area marks, but not many went on to score the other 2. Many answers stated a WAN is a wireless area network. Candidates were unable to provide further descriptions of LAN and WAN other than what the acronyms stand for. There were many inaccurate versions: LOW, LAND, LARGE in place of LOCAL and WIRELESS, WORLDWIDE, WIDER in place of WIDE.

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- 8 This question was answered poorly by most candidates, who had clearly never heard of an expert system. Poor answers referred to analysis, design, implementation etc. Some just described setting up a database.
- A very small number of good answers - almost word perfect in using the correct terminology.
- Traditionally expert system questions have not been well answered, so it was pleasing to see some responses with all the basic concepts clearly explained.
- There were still candidates, however, who still read the rubric and go through the stages need to create a generic computer system, i.e. the early stages of the systems development cycle. Even in these cases the point on gathering appropriate information and/or entering it into the system often gained the marks.
- 9 Mostly candidates answered this very well. Some alternatives given by candidates are "erroneous", "Null value", "incorrect", "beyond extreme", "unacceptable", "invalid" in place of EXTREME. "Average", "Reasonable" in place of NORMAL.
- 10 Again, too many answers related to the development cycle and not just the evaluation phase. This is possible poor preparation because the question itself was quite clear. The next frequent error was to discuss 'testing' rather than 'evaluation'. Some vague answers were seen, most involved the "users" and mentioned "improvement". There was much confusion between detailed description of tests and testing, and the evaluation of the system (which needs to refer to the RESULTS of testing)
- 11 Most candidates answered this question well. However a considerable number of candidates missed the point of the question and described how a computer game is made to be as realistic as possible.
- 12 Many candidates erroneously referred to an increase in crime due to computers and related equipment being stolen. Almost all candidates apart from the very weakest were able to get some marks for this question although one candidate mentioned a "database of fingers"!

2358 (Short Course Projects 1a/1b)

General Comments

Where Centres failed to apply the assessment specification accurately it was mainly in the marking of Project 1a. It is still the case that too few Centres are encouraging their candidates to annotate their work. There was also an increase in the number of Centres failing to indicate whereabouts in the work evidence for meeting criteria could be found. Centres are still not taking advantage of the Teacher's Guide published by OCR. This contains much good advice and, if followed, would remove many of the problems apparently experienced by Centres when assessing their candidates' work. The advice relating to the new Project 1a is particularly valuable. However, it should be read in conjunction with the specification. The notes for guidance in the specification contain very useful advice.

The training courses which OCR organise also provide opportunities for individual Centres to raise points specific to their own candidates' work.

Centres' administration left a lot to be desired on occasions, many having to be reminded to provide the Centre Authentication sheet signed by its teacher/assessors.

There were still, however, a number of Centres which failed to send Coursework Summary Forms. This delays the whole moderation process and can result in Centres failing to get 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 marking. Moderators are required to return the work to Centres and ask them to re-mark the work. This will almost certainly result in a delay in the publication of results.

Project 1a

Many Centres used the new criteria for the first time but failed to understand the need for candidates to meet all the criteria in a given mark range. This process has always been applied in Project 1b and so should have been fully understood by Centres. This was compounded by the number of Centres who marked against the new criteria but had obviously prepared their candidates using the old criteria. Such Centres were treated leniently but this may not be the case with future submissions.

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 a business oriented task of business cards, letterheads etc. This is not a significant piece of work. Neither is the production of a poster.

The requirement to mark against the new criteria was ignored by a small number of centres despite the guidelines being in Centres at the beginning of the 2004/5 school year.

It was quite clear that some Centres are still not heeding the advice given in the Teacher's Guide for this specification. Under the new scheme of assessment, candidates fail to get even the lowest ranges of marks if they fail to incorporate information in their final document

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which does not include information from non-IT sources and at least one IT source. The requirement for number is also mandatory at low mark levels. 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 Centres have candidates which copied and pasted graphs from their sources and which were really images. Any confusion is easily removed if the original numbers are included and the method of graph production is demonstrated. The easiest approach is to use a table of numbers (as requested in the Teacher's Guide at 8-10 mark level) in the final document and also to show in their write up where they came from.

Examples of misconceptions:

Yet again Centres seemed to struggle with the concept of purpose. As it mentions in the Teacher's Guide, the purpose must include identification of an audience and a description of the information to be communicated. For marks higher than 7 candidates must relate the development of the work to this audience. As it says in the Teacher's Guide, development must be evidenced by at least printouts of 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 inclusion of a purpose is a requirement of even the lower mark ranges on the new method of assessment and failure to provide a reasonable purpose could lead to a large reduction in marks. Project 1a is similar to Project 1b now 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. A number of candidates specified an audience which was far too wide ranging to be categorised when describing the development. Phrases such as "the picture/work was eye-catching" or "professional looking" would also apply to the vast majority of publications and so cannot count in this regard.

Many candidates still failed to provide evidence that they had collected, and then incorporated into their final products, information from non-IT sources. 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.

One other major failing was, once again, the lack of evidence of number in the work of many 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. 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 be 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 documented fully. Again, work lacking evidence of a list of numbers lead to many marks being lost under the new assessment.

Many Centres failed to realise that for the new assessment information has to be produced from a minimum of 2 non-IT sources which must be included in their final booklet or slide show for all but the lowest mark range. For marks above 13 information from a minimum of 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

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or CD ROMs, or in magazines, books and newspapers for 'research' purposes. They must actually incorporate a minimum of the four pieces of information (one from each source) 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.

It appeared that certain 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 advised against. Such an approach or other on-line methods such as writing frames, can limit a candidate's ability to produce their own work.

A significant piece of work is deemed to be one of at least 8 sides of A4 or even A5. The 8 sides is the actual product and does not include accompanying documentation. A number of Centres ignored this. Centres were not scaled for this reason alone this time, a degree of tolerance being applied. This will not be the case in future sessions.

Where fewer than 8 sides are produced, this tends to mean that they have failed to meet other criteria and so were scaled anyway. Some centres claimed they were unaware of this development despite the information being in the Teacher's Guide, a copy of which was sent to every centre in October 2004. There is also a comprehensive FAQ section on the OCR website.

Project 1b

A number of centres are still not following the requirements of the specification 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 marks of 8 and above, candidates must produce a manually completed data capture form. This was confused by some Centres as being equivalent to the data entry form as used in packages like Microsoft Access, for example. This is not the case. A data capture form is a grid-like table with field names as headings and data copied manually from the collected sources for 14 to 16 upwards or just completed with known data for 8-13 marks. Candidates showing screen dumps of data being entered into data entry forms on the computer do not fulfil this requirement.

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.

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 (plural – one is insufficient). The entry of text into a numeric field does not count; neither does designing field types which limit data entry. The criterion requires the candidates to write their **own** validation routines.

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 all the required output must be stated. This must be in terms of the format of the output as well. 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 must be done at the outset not as an afterthought somewhere towards the end of the work. 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

Predictions are required at every mark range above 7. Some Centres take the meaning of simple to be just indicating a general increase or decrease in variables. It is expected that even at low levels candidates will quantify these changes to a degree. For marks above 19 candidates are expected to make more complex predictions (the word simple is not used in the teachers' guide at these mark ranges). The requirement for 'Use the software to provide the answers required to solve the problem' is that predictions are made.

More Centres are now aware of what a complex model is. Centres are still using writing frames as prompt sheets for candidates. Often this leads to candidates

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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, 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.

Measuring

A number of Centres submitted work for this strand but failed to comply with the requirements of the specification. Many just used one type of sensor when the specification demands a minimum of two different types of sensor. Too many Centres regard this as an easy option. They 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 IT departments allow the Science department to teach this strand and then mark the outcomes themselves although the outcomes obviously cover the science requirements more than the 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 (Full Course Project 2)

It is rather disappointing to note, that despite the clarifications made both in previous reports and at the INSET sessions held during the Autumn and Spring terms, many Centres were still misinterpreting the assessment criteria for this Unit. It is once again hoped that the comments below will bring further clarification.

General Comments:

- Many Centres failed to complete the MS1 form correctly, which then required moderators to send CW/AMEND forms to be completed, or failed to enclose a Centre Authentication Form (CCS160) resulting in unnecessary delays in the moderation process. A small number of Centres even failed to respond to further requests for these documents.
- Also, further delays were caused by a significant minority of Centres where internal communications failed to ensure that requests for samples were not passed onto the ICT departments or staff simply failed to attempt to meet deadlines, resulting in the delayed dispatch of initial documentation and/or samples of coursework.
- Incomplete cover sheets are still common, vital information being omitted. These cover sheets are to aid the moderator in identifying each candidate accurately in a particular Centre, as well as being informed by the marker as to where evidence for the various assessment criteria may be found within the project. It must be noted that moderators are not markers and will not necessarily look for or find evidence that may be included in various parts of project but combine to cover the requirements for a particular mark level. This could then conceivably lead to differences between assessed levels and moderated levels which may then lead to changes being recommended.
- A large number of Centres still allow candidates to submit projects using bindings that are not recommended and which cause both problems to the moderator and result in excessive charges for transport being paid by both the Centre and the Board.
- It should be noted that, for each of the seventeen assessment criteria, the statements indicate a hierarchical structure. Candidates are not expected to produce documentation and evidence to cover each of these parts individually (as seen in candidate's work from a few Centres and which made for excessively large projects). However, it is expected that what they produce is of a sufficient quality to cover that level and does not simply address the "extra" that is found in the relevant description box printed in the syllabus for which the centre award the mark.
- Again, most Centres used a database to complete Project 2 which allowed candidates to meet the assessment criteria more easily than spreadsheet projects.
- The use of templates, particularly one template seen in use in several Centres, is still prevalent and it should be stressed, despite the comments seen recently on the ICT e-listings, that this is not to be encouraged as it often appears to limit candidate's opportunity to meet the necessary criteria, particularly in Centres where all candidates are given a set 'problem'. This appears to especially hinder the higher ability candidates who do not then have the opportunity to put their own 'stamp' on their work and use their own interpretation of the assessment criteria. It should also be noted by Centres that it is felt that the use of templates, and overt and excessive teacher guidance, is against the spirit of coursework. It should also be noted that some templates, including those published on the Internet and which are "advertised" as being useful tools, contain significant errors which would have lead to candidates producing work which did not meet the criteria.

Comments on the Assessment Sections:

Analysis:

A1. A large number of candidates began their projects by stating something along the lines of: "For my database project". They then went on to describe a scenario into which they could place a database system and demonstrate their ability to use this type of software package. This does not meet the requirements, which are to describe a problem and then by analysing it come to a reasoned conclusion about the most suitable method of solving it. It was often found that because a candidate made scant mention of the need for a database and then also mentioned the need for mail-merging, it was assumed by the marker that this was sufficient to award full marks. For this to be supported, there must be evidence of the candidate commenting sufficiently on the items that are requirements for the lower marks as well.

A2. The task of "collecting information" continues to cause concern as different Centres appear to allow their candidates to submit, and then accept, a very wide range of evidence. We have consistently said that completed questionnaires or claimed transcripts of interviews alone are not sufficient evidence. These must be supported by evidence that the candidate understands the process that they must go through to collect information from potential users i.e. there should be copies of correspondence that was or might have been used by both parties to set up the interview or distribute and return the questionnaires (or support any other method that may be employed). We also continue to find a small number of Centres awarding marks in this section for work done by the candidate in collecting data for processing later. This is also not worthy of any marks for this section.

A3. The description of the Inputs, Outputs and Processing, which will lead on later to helping the candidate demonstrate "thorough testing" continue to be poorly covered by many candidates. Those who then go on to add extra documentation regarding hardware and software requirements often fail to either link their comments to the needs of the system they are working on or quote reasons for their choice which are not acceptable, e.g. a candidate who is producing a system for a hotel cannot justify their choice of software package by stating that this was all they had at home or school, or whether a digital camera or scanner would be needed, when the system clearly will not require any use of graphics.

Design:

Previous reports have stated:

It is expected that Design is done prior to Implementation and that considerable thought is given to the various items in this section before making use of the chosen software package(s).

It then went on later to state:

To be awarded more than one mark in each of the first three sections of this strand of assessment, candidates must produce more than one design for each part that they identify as being necessary to the solution.

D1. Once again this year it was obvious that candidates continue to be awarded more than one mark for producing a single design for each of their tables when using Access to construct a database. It should also be stated that data structure design requires candidates to consider, fieldnames, data type, data size and data checking. Justification of choices was often weak and it should be pointed out that there is a requirement for alternative designs to be appropriate. Those few candidates that produce a system based on a spreadsheet should note that data structure design requires them to consider layout, use of formulae, formatting various cells, etc.

D2. Again, there must be evidence of designing all user interfaces, including switchboards if they are an integral part of the system, for more than 1 mark to be awarded.

D3. Similarly there must be evidence of all types of output from the system being designed. There were candidates, awarded more than 1 mark here, who had been awarded 4 marks in the analysis section for defining a complex problem, but showed no evidence of designing the mail-merge document, or only produced one design. Many of the designs seen in this section were in fact nothing much more than drawings of tables which are default settings for the chosen software package.

D1, D2 & D3 – candidates are still submitting ‘designs’ that have in fact been implemented in the software chosen for Implementation. This was especially evident in D2 & D3 where screenshots of forms, reports & letters were used as design work and in the case of one centre, candidates were obviously given a handout that was an exact copy of a default screen from Access and expected to fill in the blanks. Candidates should be producing the designs using either hand drawn work or in a software package other than that used for Implementation.

D4..Many candidates spent some considerable time and effort discussing operating systems and their relative merits, which, whilst vital to the workings of the computer, are not regarded as part of the system being produced.

Implementation:

I1 & I2. There continues to be evidence that candidates write in their documentation about changes they have made and they are then credited with more than 2 marks. On inspection, these changes are either not acceptable, because they indicate that the chosen design was not actually appropriate or that the changes listed are those which the candidate has already documented as changes made to one of their designs, e.g. altering a field length because the name of their own school would not fit, or changing a colour because it was the same as the surrounding colour and therefore could not be seen. Candidates were also using the addition of a Primary Key as a change to a relational database – this is not valid as a relational database design without a Primary Key would not be considered as ‘appropriate’ for the Design section.

I3. As has been said in training over the last couple of years, this is really a “bonus” mark that can be awarded largely for work done in the previous two parts. However, for 3 marks the candidate must document the features they have used in more than one software package and for 4 marks the candidate must justify their choice of features used. It is not possible to accept that a candidate awarded 1 or 2 marks for the previous sections can then be awarded 4 marks for this section.

I4. Centres continue to award both marks here for work that clearly only shows the transfer of data for one purpose. It should be noted that it is not acceptable to award both marks for work which includes two mail merge documents, that differ only by the body text and which do in fact only illustrate the transfer of the same data set. Candidates often did not provide sufficient evidence that they had actually used the mail merge process, instead providing only a printout of the final letter which may or may not have been produced using mail merge – candidates should be encouraged to provide a series of screen shots that show *how* they transferred the data from the database to the word processed letter. A few candidates from a small number of centres had been awarded these marks, but the evidence clearly indicated that the document had been typed and no actual data transfer had taken place, with the data items on the document and in the database not being the same.

Testing:

T1. To be awarded more than two marks for the first part of Testing, the candidate has to show that they have demonstrated that their system at least does all that the user requires. Many candidates were awarded these marks for including a large amount of random testing. The listing of Inputs, Outputs and Processing required by the user and included in the Analysis section should be the basis of this work.

T2. There was a consistent lack of comment made by candidates about their choice of test data, but despite this if they had done a lot of work, then they seemed to have been credited with all 3 marks.

User Documentation:

The major problem with the awarding of marks in this section was that candidates often forgot, or were not made aware, that the user should be regarded as a competent user of the chosen software package(s). This work should be based on how to use the system.

Errors and how to avoid them are not those which are generated by either the operating system or the chosen software package(s), but are those built into the system by the candidate (e.g. validation checks).

Evaluation:

The work of those candidates who actually produced documentation for this section was marked reasonably well, but credit for considering “the point of view of the user” was often not supported by evidence that the user had either been consulted or even considered.

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Unit Threshold Marks

Unit		Maximum Mark	a*	a	b	c	d	e	f	g	u
2357F	Raw	60				37	33	29	25	21	0
	UMS	55				48	40	32	24	16	0
2357H	Raw	60	43	36	29	23	16	12			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				26	22	19	16	13	0
	UMS	55				48	40	32	24	16	0
2359H	Raw	60	40	34	28	23	17	14			0
	UMS	80	72	64	56	48	40	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	1.66	9.60	25.15	45.05	61.14	74.99	86.72	95.09	100	41586
1994	2.92	14.19	35.95	59.81	75.17	85.38	93.28	98.15	100	22843

For a description of how UMS marks are calculated see;
www.ocr.org.uk/OCR/WebSite/docroot/understand/ums.jsp

Statistics are correct at the time of publication

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