

# **Information & Communication Technology A**

General Certificate of Secondary Education **GCSE 1994**

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

## **Reports on the Units**

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**June 2010**

**1994/1094/R/10**

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This report on the Examination provides 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 specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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# Chief Examiner's Report

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

Centres are again reminded that in Unit 2358 (Short Course coursework Projects 1a/1b) there is a choices of four strands for Project 1b and therefore correctly completed and submitted documentation is essential in enabling moderators to choose a representative sample in order to examine the work. There was a disturbing increase in the number of reports from moderators of incomplete, missing or inaccurate documentation from Centres. It was also noted that a number of centres sent the work to the wrong moderator eg 2358 work to a 2360 moderator. Centres are again requested to ensure that the correct moderator receives all the required documentation by the due deadline.

Centres are again reminded that it is a requirement for both Unit 2358 (Projects 1a/1b) and Unit 2360 (Project 2) that Centres submit a Centre Authentication Form (**Form CCS160**), signed by its teacher/assessors, and this form should be sent to the moderator with the mark sheets (**MS1**) along with, for Unit 2358, the Coursework Mark Summary sheets. It is also a requirement for each candidate to sign a Candidate Authentication Form indicating that the work submitted is their own but these forms, or a copy, should be retained at the Centre unless requested by the moderator.

Centres are also reminded that there **must** be internal moderation of the coursework to ensure that all candidates from a Centre have their work marked to the same standard. Moderators who find that work has not been internally moderated are required to return work to a Centre for remarking.

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.*

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

For this specification Centres are reminded to actively discourage candidates from using additional pages and to remind their candidates that all responses must be written on the lines provided and within the marked areas. If candidates do use additional pages or write elsewhere in the question paper they must make it very clear to the examiners which question they are actually answering. Responses that are not assignable to questions cannot be given credit.

## 2357/01 Paper 1 (Foundation)

### General Comments

The paper was well weighted, providing a good mixture of accessible and challenging questions which led to a good distribution of marks.

The questions were well understood by candidates with the exception of question 6 which seemed to be beyond the experience of many. Consequently it was poorly answered.

There did not seem to be any time difficulty for any candidates. The spaces allocated for the responses were generally appropriate and the use of extra sheets did not cause any problems.

### Comments on Individual Questions

- 1(a) A majority gained 3 or more marks for this question. The wrong answers seemed randomly distributed. The most common errors stated that a monitor was an input device and a video camera was an output device.
- 1(b) Only half the candidates obtained the mark, A4 scanner being a popular answer.
- 1(c) Over three quarters obtained the mark. Of those that did not many picked a device which was not part of the system – speakers.
- 1(d) Just over half obtained the mark. Wrong answers were distributed amongst all the devices in the system.
- 1(e) About three quarters obtained the mark.
- 2(a) This was answered well. Most candidates gained 2 or 3 marks, usually getting Resize and Rotate correct.
- 2(b)i) This was answered well. Over three quarters obtained the mark.
- 2(b)ii) This was answered well. Over three quarters obtained the mark.
- 2(c)i) About three quarters obtained the mark. However in this part and in part (ii) there were many who could not write in the correct notation. There were many who put , between the letter and digit while there were a few who wrote the two elements in the wrong order.
- 2(c)ii) About half gained both marks, but a third scored nothing.
- 2(d) This was answered quite well with over half obtaining full marks.
- 2(e)i) This was a good discriminator. Good scripts invariably got this right while it proved to be very challenging for many. About half did not score any marks.
- 2(e)ii) Just over half obtained the mark.
- 3(a) A very large majority obtained the mark.
- 3(b) A large majority scored nothing. Many gave answers of 10 or 12 and a significant number gave 22 (or 20 or 24) because they treated the two example records together.

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- 3(c) Very poorly answered with nearly half scoring nothing. Gender was often text because of the statement that it was M or F and the other two were commonly real numbers because candidates had no concept of the meaning of a real number.
- 3(d) Very poorly answered with over three quarters scoring nothing. Where marks were gained it was through references to searching and queries with the occasional sort, forms and reports.
- 3(e)i) A vast majority did not know the term.
- 3(e)ii) An equal number did not know why the field was used.
- 3(f) This was answered badly. Over three quarters obtained 3 marks or fewer. Candidates who did obtain anything mentioned IDs, passwords, firewalls and viruses, but did not manage to relate it to the question and produced stock answers.
- 4(a) This was answered very well with a vast majority obtaining full marks.
- 4(b) This was answered well. Over three quarters obtained 1 or 2 marks by referring to History and Bookmarks/Favourites.
- 5(a) Well answered by most. The biggest error was to talk about the whole poster instead of just the table, but most did well. Nearly half gained full marks.
- 5(b) About one third gained no marks. The main error was introducing validation into the answer.
- 6(a)i) Only about a quarter obtained the mark for this standard question.
- 6(a)ii) As a result an even larger percentage gained nothing for this question. The reason for it was often the trivial 'to link to the internet'.
- 6(b) This was not well answered. Most got credit for mentioning differences in speed, but no more. Many candidates equated broadband with wireless and many believed that a telephone line was no longer used.

## 2357/02 Paper 1 (Higher)

### General Comments

The question paper performed as expected, discriminating well across the ability range. Most candidates were able to access all the questions.

It should be noted that candidates still lack sufficient technical knowledge to be able to answer even simple questions on the hardware and its use in computer systems – see question 6 which was very poorly answered by most candidates.

There were far fewer candidates leaving questions blank. Candidates had sufficient time to answer the questions.

### Comments on Individual Questions

- 1(a) This question was answered well with the majority of candidates scoring at least half marks but a significant few scored no marks at all. Common errors were to assign the wrong data type but for a correct reason, not stating that the field for brothers/sisters should be a **whole** number. Most candidates correctly chose text for telephone number with the reason that such numbers can have spaces and leading zeros. However, quite a few candidates scored all six marks.
- 1(b) This question was quite poorly answered with vague references to the software and poor factual knowledge. While most candidates managed to score marks, few scored the full number. Most candidates failed to give distinguishing reasons for the choice of a database rather than a spreadsheet.
- 1(c)i) Most candidates answered this question correctly.
- 1(c)ii) Most candidates answered this question correctly – even a few that failed to answer part (i) correctly gave a correct answer here.
- 1(d) Those candidates that explained their points gained more marks than those that did not as this question was marked as a graded response. Candidates who give a list of points are not providing explanations as required by the question and failed to score over half marks. It is pleasing to note that many candidates demonstrated a good understanding of the methods and scored quite high marks on this question.
- 1(e) This question proved quite difficult for the majority of candidates and was poorly answered. A significant number of candidates invented their own field names and did not refer to the supplied database. Most failed to score the marks available on the bottom row of the table.
- 2(a) A disappointingly large number of candidates referred to the whole newsletter and not just to the list at A and lost marks on a supposedly easy question by not reading it properly.
- 2(b) A disappointingly large number of instances of references to “validation” were seen. This question was about checking for accuracy when copying data so refers to verification methods. Most candidates scored at least one mark.
- 3(a)i) Most candidates answered this question correctly.

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- 3(a)ii) Most candidates answered this question correctly with most being aware of the need for digital to/from analogue conversion.
- 3(b) Dial-up internet connections are still commonly used despite the belief that “no-one uses them now”. Many candidates confused “broadband” with “wireless” assuming that these were one and the same thus demonstrating a poor understanding of how connections to the internet are made. However, many candidates gave good answers to this question.
- 4 Most candidates answered this question well. Where explanations were rare in q. 1(d), they were common here. As this question also gave credit for explanations rather than lists of points, most candidates scored over half marks. Most candidates showed a good understanding of the wider issues involved giving quite detailed answers.
- 5(a) This question was marked as a Level of Response and reference should be made to the mark scheme for more details of this. Most candidates achieved the middle level by mentioning both advantages and disadvantages. It was pleasing to note that the majority of candidates kept their responses within the context of designing and selling kitchens and mentioned the importance of being able to show and amend designs with the clients. The higher level marks were awarded when sufficient depth was given and a greater usage of specific ICT terminology and issues were demonstrated.
- 5(b) This question was not well answered despite appearing in various guises over several examination series.
- 5(c) These questions were well answered with most candidates scoring over half marks.
- i)&ii) Candidates showed a good understanding of how the internet could be used and the issues that may arise.
- 6 This question was poorly answered demonstrating that candidates had little technical knowledge of computer systems. Many incorrectly stated that secondary storage could be used as a backup if the main memory failed. Candidates should be aware of, and be able to explain the purpose of, the main components of computer systems.



## 2358

### General Comments

Even though the coursework requirements have been the same since 2004, there was still a concern that a number of centres do not understand them.

As has been noted in previous reports, where Centres failed to apply the assessment specification accurately it was mainly due to the marking of Project 1a. There was still a number of Centres where teachers failed to annotate the candidates' work with regard to where the evidence for meeting the criteria could be found. It is apparent that not all Centres are taking advantage of the Teacher's Guide published by OCR. This should be used in conjunction with the criteria for assessment, the notes for guidance as well as this report. If all four were used when assessing the work, this would remove many of the problems apparently experienced by Centres.

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

A lot fewer Centres had to be reminded to provide the Centre Authentication sheet (CCS160) signed by its teacher/assessors, although it was still necessary in some cases.

There are still, however, a number of Centres failing to send Coursework Summary Forms. This delays the whole moderation process and can result in Centres failing to have their results published on time. It is in the Centre's own interests to adhere to deadlines and to also provide the coursework sample within the 3 working days deadline.

The lack of internal moderation carried out by some Centres is still a worry. Centres are reminded that they have a responsibility to carry out internal moderation of marking. If internal moderation is not carried out it can lead to inconsistencies in marking. If these inconsistencies lead to an invalid order of merit moderators are required to return the work to Centres and ask them to re-mark the work. Such action obviously can result in a delay in publication of the Centre's results. This is happening with a greater frequency recently.

### Project 1a

A number of Centres still fail to understand the need for candidates to meet all the criteria in a given mark range. This process has always been applied for Project 1a and so should have been fully understood by Centres.

Most Centres now realise 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.

Centres are still failing to realise the importance of the use of non-IT sources. Candidates fail to get even the lowest ranges of marks if they fail to include information from non-IT sources and at least one IT source in their final document. Just collecting leaflets and booklets or magazines is insufficient. Information from them, whether it be text, images or numbers, must be incorporated into their final product. All non-IT sources must be hard copy. The use of the candidates' own knowledge, memory or 'my teacher' is not considered to be using non-IT sources. A number of Centres still think that it is acceptable to show an image or some text and then give the name of the book or magazine it came from; it is not. The evidence should be in the form of the original but where this is not possible, such as using books, candidates must include photocopies. A

number of candidates are showing images in their write up claiming it as a non-IT source instead of showing the original or photocopy. This should also be clearly indicative of its origin. Two pages from the same magazine, for example, only counts as one source, not two.

The requirement for the inclusion of numbers 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 which their graph is based on. Some Centres have candidates which copied and pasted graphs which were really images from their sources. 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 showing in their write up where these numbers came from.

### **Examples of misconceptions:**

For any marks at all to be awarded, candidates must provide evidence that they have 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. This is equally valid for IT sources. It is not sufficient for candidates to look at the Internet or CD ROMs, or in magazines, books and newspapers for 'research' purposes. Many candidates think that the point of collecting non-IT sources is to provide ideas for layout and presentation; it is not, it is so the information collected can be used.

For marks above 2 to be awarded there must be evidence of numbers (plural) in the candidate's work. This was a major failing amongst 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. 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 such as dates, times or prices are used they cannot have dashes, slashes or the word to (as in opening times) as this makes them text as does the use of numbers in sentences. Graphs can be construed as images unless the manner in which they are produced is documented fully. The source of the numbers must be documented, they cannot just be invented by the candidate.

For marks above 4 to be awarded candidates must make a statement about the purpose of the work. 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 as well as the reason for undertaking the work. The reasons are often omitted by candidates. Some Centres still seem to think that it is in order to get the candidates to produce a booklet on their favourite football team, music artists or other pastime without giving thought as to why this might be needed.

For marks of 7 or higher 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 statements regarding developments cannot be replaced by an evaluation of the final product.

The inclusion of a purpose is a requirement of even the lower mark ranges and failure to provide a reasonable purpose could lead to a large reduction in marks. 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 really apply to the vast majority of publications and so cannot count in this context. In addition, just writing that they have made changes as they felt it would suit their audience is not enough. Candidates need to say why they feel it would suit their audience.

Some Centres mistakenly think that the reference in the specification and in the Teacher's Guide to a 'piece of work' includes their documentation. This is not so; checking the work and showing consistency apply to the product, not to the candidate's write up.

For marks above 10 candidates must produce a significant piece of 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 this does not include accompanying documentation. A number of Centres ignored this. 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. Candidates 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. In addition searching using multiple criteria requires the use of Boolean operands or the use of Advanced Search features. The resulting information found must be included in their final product. If the second source is clipart, the source must be clearly shown. Many candidates just show images and claim they came from clipart. To avoid any confusion, candidates should provide evidence that the work did not come from the internet. When using software packages that have clipart built in, it is important to show that the clipart has not come from the internet by making sure, for example, when using Microsoft Word, the source 'All collections' is not selected as by default this option searches the internet.

It still appears 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.

Again, the single biggest shortcoming in the work seen was the inability of candidates to meet the hyperlinks/refined search criterion, required for marks above 16. It cannot be achieved by candidates simply following a number of hyperlinks. Candidates have to relate their choice of which hyperlinks to follow to their purpose and audience. Many candidates do not refer to their audience when considering which hyperlinks to follow or indeed which information to use as a result of following the hyperlinks. This leads to a reduction in marks. A number of hyperlinks must be followed and the resulting information they find must be used in their final product. For marks in the top mark range candidates must provide evidence of having used a proof reader as well as a spell checker. A proof reader must be a suitable adult who must be identified. They must then annotate a version of the booklet or presentation to indicate errors in spelling, grammar and factual information and sign that they have done so. It is not sufficient for

the proof reader to just sign the work and say they have found no errors. The candidate must then produce a final version of the booklet or presentation with these errors removed.

Additional skills:

The notes for guidance in the specification clearly indicate that these must be achieved by the candidate by referring to their own work and not by quoting unrelated examples.

Health and safety, for example, must be referred to by the candidate with reference to their own work rather than just commenting on perceived good practice. Candidates are confusing errors with problems. An error is accompanied by error messages and these should be evidenced.

## **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 very 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. This must include evidence of the actual magazines or web sites. Printouts must show the data that has been transferred to the data capture form. 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 requirement is for candidates to use routines. Just ticking a compulsory field option or 'must

be answered' option is not writing a routine. Defining range checks, however, is equivalent to writing a routine. The entry of text into a numeric field does not count; neither does designing field types which limit data entry such as drop down lists. The criterion requires the candidates to write their **own** validation routines.

A disturbing trend in much of the work seen was the lack of annotation by candidates. Many often failed to include a description of the task they were undertaking. 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. If candidates have not specified a task they are unable to relate their choice to the task. 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. Some of the reasons given are rather trivial, often stating what information the field contains rather than the reason why it is needed. 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 able 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.

Centres are still using writing frames as prompt sheets for candidates and worksheets with very prescriptive instructions. As it said earlier in this report, 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 advised against. Often this leads to candidates being unable to truly explore the model. More Centres are now aware of what a complex model is but validity of a model is still causing problems. Candidates are required to compare the model with a real life situation in order to secure credit. Candidates who just write about what their model is made up of and say that they have met their original aim do not meet this requirement. 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 and must also show a number of steps in its creation not just write about the finished model.

### **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. 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 system created must be physical. Simulations or mimics are not acceptable for marks above 19. The device created must be of their own design not one that has come in kit form which tells the candidate what to do. 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 system affecting the input of a system. It is not considered to be the reaction to inputs.

## 2359/01 Paper 3 (Foundation)

### General Comments

The majority of candidates attempted all of the questions on the paper. The rubric was followed without difficulty.

### Comments on Individual Questions

- 1 The great majority of candidates got full marks for this question.
- 2 This question was also answered very well.
- 3 There were many responses which gained five marks. The use of 'presentation software' was invariably correct even when the other four options were incorrect.
- 4 This question was generally well answered.
- 5 On the whole this question was well answered.
- 6 There were very few entirely correct answers. Many managed to gain two marks but there were a significant number of 1 or 0 mark answers.
- 7 This was not answered very well. Some marks were gained for knowing that "producing a user guide" was "documentation" and "running the old system ...." was implementation. Some candidates changed their answers which sometimes made it difficult to interpret their answer.
- 8 Candidates who gained most marks relied on a diagram to explain their answer. Unfortunately these were not always fully labelled.
- 9 This question was reasonably well answered.
- 10 Many could describe 'OMR' and 'MICR' but few could identify a use for each. Some candidates confused 'MICR' as an abbreviation for microphone. There were many blank responses.
- 11(a)i) 'Bar code reader' was the most popular response. No credit was given for 'scanner' on its own.
- 11(b)ii) Faster data entry was often correctly identified to gain one mark.
- 11(b)i) There were few correct answers. Some answers were not very precise others thought touch screens could be used.
- 11(b)ii) Most who gained one mark identified 'card/account number' but few could correctly find another data item.
- 11(c) Many candidates gained a mark for mentioning the advantage to the customer of having the goods delivered but were often unable to think of other advantages.
- 11(d) There were often vague answers that were not related to patterns of employment.

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- 12 Correct definitions of WAN and LAN to score two marks were fairly common but very few could find a second characteristic of each.
- 13 Many candidates did not gain any marks. There was a lack of understanding that the question was about onscreen data entry forms. They often wrote about the database and the features it should have such as data protection, passwords etc.



## 2359/02 Paper 3 (Higher)

### General Comments

There was similar candidate performance compared with 2009 on a paper which allowed all candidates opportunities to display their knowledge.

Most candidates attempted the majority of the questions and made a reasonable effort throughout the paper.

It is still disappointing, however, to see so many candidates failing to answer questions well which only require fairly basic technical knowledge. The majority of candidates appeared to lack a grasp of technical terms.

Below is a description of the main points arising from this year's examination.

### Comments on Individual Questions

- 1 This was well answered with many candidates gaining 4-5 marks. The most common incorrect answer was that modelling was a utility.
- 2 This was left unanswered by many candidates. Many others just invented names to fit the letters. Few knew the correct terminology.
- 3(a)i) Many candidates seemed not to know the correct name of the device they were attempting to give.
- 3(a)ii) Many candidates gave one word answers without expanding on what they meant.
- 3(b)i) Again, few candidates were aware of the correct terminology.
- 3(b)ii) This question was well-answered.
- 3(c) This question was well-answered.
- 3(d) Many candidates seemed to be unaware that online shopping co-exists with supermarket shopping. Despite this there were many good answers, although there were still a number of generalisations such as 'greater unemployment'.
- 4 Many candidates gained a mark for defining each type but most failed to gain the other mark(s).
- 5 Candidates frequently failed to gain more than 1 mark. Most wrote about the advantages of star and bus networks without giving the drawbacks of ring networks, though marks were awarded for inferring these.
- 6 Candidates still find difficulty with this question frequently showing their lack of knowledge about how a computer control system works with frequent answers referring to generalisations with little reference to the required temperature or preset value.
- 7 Candidates often failed to write about on screen data entry forms and preferred instead to write about database structure including validation, security of data and even the data protection act.

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- 8 This was quite well answered.
- 9 Candidates scored reasonably well on this question but quite a number tried to describe an expert system rather than answering the question and seemed to gain marks despite this.
- 10 Candidates spent much of their time describing the methods rather than giving the advantages of them. A number of candidates wrote down the disadvantages of the methods thereby not answering the question.
- 11 Many candidates concentrated on one or two methods and were consequently unable to score many marks. Most of the advantages given were described well but the disadvantages were often quite simplistic.

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### General Comments

1. The work for this module is expected to be based on a problem, which should then consequently influence the rest of the work throughout the project. Whilst it has been said that each of the seventeen assessment objectives are hierarchical in required evidence and the mark gained by a candidate for one may not necessarily restrict that possible in another, it has to be accepted that there must be a knock-on effect for many; e.g. where a candidate defines a complex problem, then it must be accepted that at least one type of the output from the system they produce would reflect this and consequently design work and implementation should include evidence of this. If it does not, then it cannot be accepted that they have covered all the ground that is necessary to award marks in these areas.
2. It was good to see that centres have heeded our previous comments about the submission of work in plastic folders. Almost entirely this year, centres submitted candidate's work simply as a set of A4 sheets treasury tagged together or within a manila folder. This made the actual process of moderation significantly easier in many instances.
3. There was more evidence this year of what in the past has tended to indicate "poor guidance" from the teacher. This tends to result in candidates producing projects which are far larger than is necessary which on inspection often show work has been done on items that do not meet any of the assessment criteria; eg candidates are allowed or even encouraged to discuss a whole range of items of hardware, including scanners, digital cameras, etc or software packages such as different operating systems or virus checking packages, all of which have no direct bearing on the system being produced and consequently add nothing to the acceptable evidence. At the same time, we also find candidates arguing between different Office suites rather than the actual package(s) their system will require.
4. Despite having mentioned many times in both reports and training materials what the required evidence is for individual assessment objectives for this module, we still find that marks are awarded where this level of evidence is just not included.

### Specific Comments

#### Analysis:

1. We continue to find that candidates are awarded marks for A2, where quite plainly they either do not understand the whole process and consider it acceptable simply to complete questionnaires themselves or in a few cases have not actually collected any information at all. Whilst it is now very rare, there are just a few centres awarding marks here for collecting data or asking questions that just would not provide the candidate with information about how the present system works.
2. For A3 (1 or 2 marks) candidates must describe a number of scenarios, in terms of the data required to begin (Input), the process that is gone through to find the answer (Processing) and the format that the answer is given to the user (Output), which the present system copes with. To simply list/describe a series of inputs, processes and outputs, which are unrelated does not meet the requirements to award marks here. As has already been stressed, this is one major section that has a significant effect. Without this level of evidence, not only can marks for generic identification of hardware and software items be awarded, but it is not then possible for candidates to thoroughly test (as has been defined) their system or do any more than state in their evaluation what their system can do.

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### Design:

1. Many times in the past, it has been stated that all designs must be appropriate. This means that all designs for data structures must allow the system to do what they have just commented on, user interfaces used to populate a database must match the chosen data structure and all outputs mentioned must be considered.
2. For more than 1 mark to be awarded for D1, D2 or D3, then there must be at least two designs for every part designed. Eg a relational database with three tables will need two designs for the data structure of each table, two designs for each user interface, etc.
3. Justification of choice should be made on reasons more substantial than one is “more professional” than another.
4. Comments regarding which software and hardware items will be used should be based on the features the chosen designs require compared with those offered by different items. Choices based on cost or availability are often found to be irrelevant.

### Implementation:

1. It is often found that candidates are awarded marks here for simply showing the process they have gone through, whereas the requirements for 1 or 2 marks for both I1 and I2 are to either list or describe the features of the software package used to complete the task.
2. Changes made, which meet the requirements to award more than 2 marks, must be as a result of unforeseen circumstances and not simply because the candidate realises that their chosen design was faulty.
3. To award the fourth mark for I3, then candidates must justify their use of certain features of both software packages used.
4. We continue to find that marks for I4 are awarded to a candidate using “cut & paste” techniques. At the same time, candidates are also often awarded both marks, where evidence clearly shows only one transfer of data has been evidenced.

### Testing:

1. To “thoroughly test” their system candidates must refer back to the analysis section and demonstrate that their system can, at least, do all they have said is required of it. The inclusion of multiple tests, where no reference is made to the requirements, not only does not meet the criterion to award more than 2 marks, but is an example of where candidates have lacked guidance and produced work that cannot be rewarded.
2. Again, we have stated on numerous occasions that candidates are required to specify exactly the expected results of tests, especially queries. It is unacceptable to award marks to candidates where they simply state that a certain number of records will be found.

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### User Documentation:

This was generally well covered by those candidates who produced work for this section. Marks were largely awarded correctly, although we still find candidates awarded marks for commenting on error messages that are produced by the operating system or chosen software package, rather than as a result of some test they have built into the system themselves.

### Evaluation:

As has already been stated, we often found that the work here had been over marked, as candidates had been awarded marks for thoroughly testing their system, whereas in fact they had only done lots of testing and not referred back to what they had stated were the system requirements.

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