



General Certificate of Secondary Education

**Information and Communication
Technology 3522 / 3528**

Specification B

Examiners' Report

2005 examination - June series

- 3522 Full Course
- 3528 Short Course

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Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales 3644723 and a registered charity number 1073334. Registered address AQA, Devas Street, Manchester. M15 6EX.
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Full Course

Foundation Tier

General

Most candidates attempted most of the questions on the paper. There were some excellent papers showing a good breadth and depth of knowledge at this level. Those very few candidates who omitted questions or parts of questions often demonstrated a good understanding of those they attempted. Most candidates attempted the multiple choice and short answer questions with significantly greater success than those questions requiring diagrams or more extended written answers. A very few candidates made too many or too few choices in the multiple choice questions, for example, candidates made three choices when only two were required, thus reducing the maximum number of marks that could be awarded for the question.

When answering the questions on the written papers, some candidates gave the answers 'quicker', 'cheaper', 'easier', 'neater', 'more powerful', 'makes fewer mistakes', 'it could crash', etc. without further qualification, and credit was not given for these simplistic answers. More successful candidates explained, what is 'quicker', why it is 'quicker', what are the consequences because 'it could breakdown', etc. in relation to the context of the question. In addition, one word answers were not usually awarded a mark when a short description or explanation was required. Similarly, no marks were given for repeating the question without elaboration, and vague, repetitive or inaccurate answers. Better answers related well to the context of the question, were detailed and accurate, used appropriate technical language, and had illustrative examples. It was not uncommon for candidates to be awarded marks because they had given a good example, where marks could not be given for a weak explanation or a vague description which lacked technical accuracy. Diagrams were often poorly labelled and not well drawn.

Most candidates were appropriately entered at this level but a very few candidates were inappropriately entered, and these entries were often part of a larger entry of candidates from a centre. Inappropriately entered candidates often expressed themselves very well and were more likely to complete questions in full and gain full marks. Such candidates may have a better opportunity to fully demonstrate their knowledge and understanding, and achieve higher grades, if they are entered for an appropriately demanding tier.

For the first time, the marking of the Foundation tier paper was computer-based using e-Marker®. The written scripts are scanned and saved in electronic form, and each item (subsection of a question) is marked separately. Each item is categorised as auto, general or expert. Auto marking is particularly appropriate for multiple choice questions; general marking for short answer questions and diagrams requiring a straight forward response; and expert marking for more complex and extended answers. Further details of the e-marking scheme can be found on the AQA Website.

Question 1

Overall, most parts of this question were answered correctly by the overwhelming majority of candidates. However, a few candidates did not know that a spreadsheet would be used to work out a budget in c)iii. In d), many candidates were awarded only two marks. The most popular incorrect answer was 'There are no viruses on the floppy disk'.

Question 2

Most candidates answered a)i correctly. Most candidates could identify one cell which changes automatically in a)ii, but only a few could identify both cells. Some candidates answered a)iii correctly but the answer ‘=AVERAGE(B1:B2) distracted some. Few candidates could accurately write down the correct formula in a)iv. In a)v, most candidates were awarded 2 or more marks. The answer ‘Make one checkout for less than 10 items’ distracted some candidates. Only a very few candidates could give a satisfactory answer in a)vi. In b)i and ii., descriptions were often vague and lacked detail and few candidates were awarded one or more marks. In c) most candidates were awarded 1 mark and the answer ‘Data logging’ distracted some candidates.

Question 3

Overall, most parts of this question were answered correctly by most candidates. Many candidates answered a)ii correctly but some incorrectly indicated that a key field is used because it is the most important field. In c)ii, a few candidates indicated that a ‘content’ check would detect if the record was incorrect. Many candidates answered c)iii correctly but some incorrectly believed that a check digit on the Posted_At field would detect that the record was incorrect. In e) many candidates chose the incorrect answer ‘The database accepts MICR input’.

Question 4

Overall, most parts of this question were answered correctly by the overwhelming majority of candidates. Most candidates were awarded three or more marks in a) but some believed <RETURN> should be pressed at the end of a line. In e)i, many candidates were awarded a mark but some reasons lacked sufficient detail or were not clearly expressed. Most candidates answered e)ii correctly, but again, but some reasons lacked sufficient detail or were not clearly expressed.

Question 5

Overall, around half of this question was answered correctly by most candidates. In a), most candidates were awarded one or more marks but some could not write the instructions in a correct sequence or format. The most common mistake was a failure to view the problem from the robot’s perspective, and write the instructions taking this into account. In b)i, a few candidates were awarded full marks but some were awarded no marks as they were unable to draw a part of the path the robot would take. Some candidates answered b)ii correctly but many did not. The overwhelming majority of candidates incorrectly believed that a floor sensor would be used in d)ii. In d)iii many candidates did not realize that the robot needed to cope with the situation and carry on with its task without human intervention. In d)iv a very few candidates were awarded 2 or more marks but most candidates were awarded no marks. Descriptions were often vague and not in context, or the meaning of ‘feedback’ was interpreted in a context other than that of computer control.

Question 6

Most candidates answered part a) and b)i correctly. Many candidates answered b)ii correctly; however, some answers were not clearly expressed. Many candidates answered c) correctly although a few incorrectly indicated that the device would be a CD-ROM. In d)i, the overwhelming majority of candidates were awarded two or more marks although many thought that ‘The Operating System is multi-user’ was a sufficient reason for delayed printing. Many candidates were awarded one or more marks in d)ii; however, few candidates progressed beyond drawing a correct topology and indicating that there would be a networked printer. Diagrams were often unclear. Few candidates related this question directly to their experience of network topologies that they might be familiar with in school. Some candidates answered e) correctly but many incorrectly indicated that ‘A floppy disk has a bandwidth of 3 ½ inches’ was a true statement.

Question 7

Most candidates were awarded two or more marks on a) but only a few were awarded full marks. Part b) was answered correctly and in full by only a very few candidates. Many candidates neglected to record the time both on entry and on exit. Nearly all candidates were awarded one or more marks on c)i but many incorrectly selected 'There will be fewer convictions for speeding' as an advantage. Most candidates could not clearly state another advantage to a motorist in c)ii. Most candidates answered c)iii correctly. 'Fewer people will use public transport' was the most common incorrect answer. In c)iv, very few candidates could clearly describe another disadvantage to a motorist.

Question 8

Most candidates were awarded more than two marks on a)i. 'All the languages of the world are on the Internet' was the most popular incorrect answer. In a)ii, very few candidates were awarded a mark. Answers were frequently not means by which traditional ways of life could be undermined, and were sometimes not other means. Some candidates were awarded a mark in a)iii but many answers did not address the advantages specifically for those who feel isolated or lonely. Many candidates were awarded one or more marks in b)i and ii, and c). Incorrect answers covered the range of possible responses. Only a very few candidates were awarded marks in d). Answers did not always focus on the advantages and disadvantages to an individual country and were often not well expressed.

Higher Tier

General

Most candidates attempted most of the questions on the paper. There were some excellent papers showing a good breadth and depth of knowledge at this level. Those candidates who omitted questions or parts of questions often demonstrated a good understanding of those they attempted.

When answering the questions on the written papers, a few candidates gave the answers 'quicker', 'cheaper', 'easier', 'neater', 'more powerful', 'makes fewer mistakes', 'it could crash', etc. without further qualification, and credit was not given for these simplistic answers. More successful candidates explained, what is 'quicker', why it is 'quicker', what are the consequences because 'it could breakdown', etc. in relation to the context of the question. In addition, one word answers were not usually awarded a mark when a description or explanation was required. Similarly, no marks were given for repeating the question without elaboration, and vague, repetitive or inaccurate answers. Better answers related well to the context of the question, were detailed and accurate, used appropriate technical language, and had illustrative examples. It was not uncommon for candidates to be awarded marks because they had given a good example, where marks could not be given for a weak explanation or a vague description. Diagrams were sometimes poorly labelled and not well drawn.

Most candidates were appropriately entered at this level but a very few candidates were inappropriately entered, and these entries were often part of a large entry from one centre. Although there was generally improved literacy and many answers were better structured, inappropriately entered candidates often expressed themselves very poorly and were more likely to omit parts of questions. Such candidates often answered multiple choice and short answer questions with greater success and there were more of these on the foundation tier paper. Candidates have better opportunities to fully demonstrate their knowledge and understanding if they are entered for an appropriate tier. It is likely that inappropriately entered candidates will obtain lower grades as questions on the higher tier paper will be less accessible to them than questions on the lower tier paper, perhaps causing them to be awarded significantly fewer marks. Centres are urged to enter for the Foundation tier those candidates who do not express themselves with clarity in written English.

The Higher tier paper was marked traditionally.

Question 1

Overall, most parts of this question were answered correctly by the overwhelming majority of candidates. However, a very few candidates did not know that a spreadsheet would be used to work out a budget in b)ii. or that an operating system could be used in b)iv. In c), many candidates were awarded only two marks. The most popular incorrect answer was ‘There are no viruses on the floppy disk’. In d), most candidates were awarded marks for answers involving backup, virus scanners and firewalls but few were awarded full marks.

Question 2

Most candidates answered a)i correctly, and some candidates wrote down correct formulae in a)ii and iii, however, many candidates lost marks by using incorrect syntax. In a)iv, most candidates were awarded 1 or more marks. Correct answers focused directly on improving the speed of operation of each checkout using technology or training rather than, for example, designating one checkout for less than 10 items. Only a very few candidates could give a satisfactory answer in a)v. In b)i and ii., descriptions were often vague and lacked detail and few candidates were awarded one or more marks. In c) most candidates were awarded 1 mark and the answer ‘Data logging’ distracted some candidates. In d), many candidates noted that the model could help work out the number of checkouts required in the new supermarket and the importance of investment in high speed checkout technology, but several missed the point and described unrelated design features of a new supermarket.

Question 3

Overall, most parts of this question were answered correctly by most candidates. In c)ii, a few candidates incorrectly indicated that a ‘content’ check would detect if the record was incorrect. Few candidates could describe a suitable validation check in c)iii. In e) the most common answer was related to some feature of mass storage or easy access. In f) most candidates knew that the order of the sort was based on the Posted_At field but many did not know the difference between ascending and descending.

Question 4

Overall, most parts of this question were answered correctly by most candidates. In b) many candidates could not be awarded marks as they noted only that, for example, word B was underlined but not that word A was not underlined. Better answers were comparative statements, such as: ‘words A and B have different fonts’; word B is bold but word A is normal. In e)i, many candidates were awarded one mark for noting that screen B would be easier to read but could not go beyond this. Some reasons lacked sufficient detail or were not clearly expressed. In e)ii, many candidates were awarded one mark for noting that screen A would make a better handout as it contains more information but could not go beyond this. Some reasons lacked sufficient detail or were not clearly expressed. Almost all candidates could clearly describe the differences between landscape and portrait.

Question 5

Overall most of this question was answered correctly by many candidates. In a), most candidates were awarded one or more marks but a few could not write the instructions in a correct sequence or format. In b)i, several candidates were awarded full marks but some were awarded no marks as they were unable to draw a part of the path the robot would take. Many candidates answered b)ii correctly but some did not. In c)iii, some candidates knew that an actuator was a motor but most did not realize that an electric motor would be used. In d)iii some candidates did not realize that the robot needed to cope with the situation and carry on with its task without human intervention. In d)iv a few candidates were awarded 2 or more marks but most candidates were awarded one mark. Descriptions were often vague and not in context, or the meaning of ‘feedback’ was interpreted in a context other than that of computer control.

Question 6

Most candidates answered part a) correctly. Some candidates answered b) correctly; however, many answers were not comparative descriptions. Many candidates answered c)i correctly although a few incorrectly stated that the device would be a CD. In c)ii, some candidates knew that a CD has a storage capacity of approximately 700 Mbytes, however, there were also a variety of unlikely answers. In d)i, many candidates were awarded one or more marks but few could provide three different and adequate reasons for delayed printing. Most candidates were awarded one or more marks in d)ii; however, few candidates progressed beyond drawing a correct topology and indicating that there would be a networked printer. Diagrams were often unclear. Few candidates related this question directly to their experience of network topologies that they might be familiar with in school. Some candidates were awarded 1 mark in e) but few could go beyond statements such as: if there are many users the network slows down.

Question 7

Most candidates were awarded one or more marks on a) and some were awarded full marks. Part b) was answered correctly and in full by some candidates but some candidates neglected to record the time both on entry and on exit. In c), only a minority of candidates were awarded more than four marks. Many candidates stated all they knew about the benefits of automation without selecting the appropriate features for the context given in the question. Some candidates confused the ICT system described in the question with current charging arrangements to drive into central London. Although there are many advantages and disadvantages in common, there are differences which some candidates overlooked.

Question 8

This question was difficult for most candidates. Only a few candidates understood the context developed in a) although many attempted the question. Perhaps as a result, many reasons given missed the point, or were too general or vague or lacked detail. Some candidates could identify one effect in b) but few could go beyond this. Only a very few candidates were awarded marks in c). Although many candidates wrote at length, answers did not always focus on the advantages and disadvantages to an individual country and were often not well expressed. Candidates would be well advised to read the question more carefully and plan their answers in the context described rather than making general points that do not relate to the question.

Short Course

Foundation Tier

General

Most candidates attempted most of the questions on the paper. There were some excellent papers showing a good breadth and depth of knowledge at this level. Those very few candidates who omitted questions or parts of questions often demonstrated a good understanding of those they attempted. Most candidates attempted the multiple choice and short answer questions with significantly greater success than those questions requiring diagrams or more extended written answers. A very few candidates made too many or two few choices in the multiple choice questions, for example, candidates made three choices when only two were required, thus reducing the maximum number of marks that could be awarded for the question.

When answering the questions on the written papers, some candidates gave the answers 'quicker', 'cheaper', 'easier', 'neater', 'more powerful', 'makes fewer mistakes', 'it could crash', etc. without further qualification, and credit was not given for these simplistic answers. More successful candidates explained, what is 'quicker', why it is 'quicker', what are the consequences because 'it could breakdown', etc. in relation to the context of the question. In addition, one word answers were not usually awarded a mark when a short description or explanation was required. Similarly, no marks were given for repeating the question without elaboration, and vague, repetitive or inaccurate answers. Better answers related well to the context of the question, were detailed and accurate, used appropriate technical language, and had illustrative examples. It was not uncommon for candidates to be awarded marks because they had given a good example, where marks could not be given for a weak explanation or a vague description which lacked technical accuracy. Diagrams were often poorly labelled and not well drawn.

Most candidates were appropriately entered at this level but a very few candidates were inappropriately entered, and these entries were often part of a larger entry of candidates from a centre. Inappropriately entered candidates often expressed themselves very well and were more likely to complete questions in full and gain full marks. Such candidates may have a better opportunity to fully demonstrate their knowledge and understanding, and achieve higher grades, if they are entered for an appropriately demanding tier.

As with the Full Course Foundation tier paper, the marking of the Short Course Foundation tier paper was also computer-based using e-Marker®.

Question 1

Overall, most parts of this question were answered correctly by the overwhelming majority of candidates. However, a few candidates did not know that a spreadsheet would be used to work out a budget in c)ii. In d), many candidates were awarded only no marks. The most popular incorrect answer was 'You can store up to 1.44 Gbytes on a 3.5inch floppy disk'.

Question 2

Many candidates answered a)i correctly. Some candidates could identify one cell which changes automatically in a)ii. Several candidates answered a)iii correctly but the answer '=AVERAGE(B1:B2)' distracted some. Few candidates could accurately write down the correct formula in a)iv. In a)v, the overwhelming majority of candidates were awarded 1 or more marks. The answer 'Make one checkout for less than 10 items' distracted many candidates. In b), descriptions were often vague and lacked detail and few candidates were awarded one or more marks.

Question 3

Overall, most parts of this question were answered correctly by many candidates. Many candidates answered a)ii correctly but some incorrectly indicated that a key field is used because it is the most important field. Many candidates answered c)ii correctly but several indicated that database software will not run if incorrect data is stored.

Question 4

Overall, most parts of this question were answered correctly by the overwhelming majority of candidates. Most candidates were awarded one or more marks in a) but some believed <RETURN> should be pressed at the end of a line. In e), many candidates were awarded a mark but some reasons lacked sufficient detail or were not clearly expressed.

Question 5

Overall, around half of this question was answered correctly by most candidates. In a), many candidates were awarded one or more marks but some could not write the instructions in a correct sequence or format. The most common mistake was a failure to view the problem from the robot's perspective, and write the instructions taking this into account. The overwhelming majority of candidates incorrectly believed that a floor sensor would be used in c)ii. In c)iii many candidates did not realize that the robot needed to cope with the situation and carry on with its task without human intervention.

Question 6

The overwhelming majority of candidates answered part a) correctly. Several candidates were awarded one or more marks in b); however, few candidates progressed beyond drawing a correct topology and indicating that there would be a networked printer. Diagrams were often unclear. Few candidates related this question directly to their experience of network topologies that they might be familiar with in school.

Question 7

The overwhelming majority of candidates were awarded one or more marks on a). Part b) was answered correctly and in full by only a very few candidates. Many candidates neglected to record the time both on entry and on exit. Most candidates were awarded a mark on c)i but some incorrectly selected 'There will be fewer convictions for speeding' as an advantage. Only a very few candidates could clearly state another advantage to a motorist in c)ii.

Question 8

Most candidates were awarded more than two marks on a)i. 'All the languages of the world are on the Internet' was the most popular incorrect answer. In a)ii, very few candidates were awarded a mark. Answers were frequently not means by which traditional ways of life could be undermined, and were sometimes not other means. Some candidates were awarded a mark in a)iii but many answers did not address the advantages specifically for those who feel isolated or lonely. Many candidates were awarded one or more marks in b)i and ii. Incorrect answers covered the range of possible responses.

Higher Tier

General

Most candidates attempted most of the questions on the paper. There were some excellent papers showing a good breadth and depth of knowledge at this level. Those candidates who omitted questions or parts of questions often demonstrated a good understanding of those they attempted.

When answering the questions on the written papers, a few candidates gave the answers 'quicker', 'cheaper', 'easier', 'neater', 'more powerful', 'makes fewer mistakes', 'it could crash', etc. without further qualification, and credit was not given for these simplistic answers. More successful candidates explained, what is 'quicker', why it is 'quicker', what are the consequences because 'it could breakdown', etc. in relation to the context of the question. In addition, one word answers were not usually awarded a mark when a description or explanation was required. Similarly, no marks were given for repeating the question without elaboration, and vague, repetitive or inaccurate answers. Better answers related well to the context of the question, were detailed and accurate, used appropriate technical language, and had illustrative examples. It was not uncommon for candidates to be awarded marks because they had given a good example, where marks could not be given for a weak explanation or a vague description. Diagrams were sometimes poorly labelled and not well drawn.

Most candidates were appropriately entered at this level but a very few candidates were inappropriately entered, and these entries were often part of a large entry from one centre. Although there was generally improved literacy and many answers were better structured, inappropriately entered candidates often expressed themselves very poorly and were more likely to omit parts of questions. Such candidates often answered multiple choice and short answer questions with greater success and there were more of these on the foundation tier paper. Candidates have better opportunities to fully demonstrate their knowledge and understanding if they are entered for an appropriate tier. It is likely that inappropriately entered candidates will obtain lower grades as questions on the higher tier paper will be less accessible to them than questions on the lower tier paper, perhaps causing them to be awarded significantly fewer marks. Centres are urged to enter for the Foundation tier those candidates who do not express themselves with clarity in written English.

The Higher tier paper was again marked traditionally.

Question 1

Overall, most parts of this question were answered correctly by the overwhelming majority of candidates. However, a very few candidates did not know that a spreadsheet would be used to work out a budget in b)i. In d), most candidates were awarded marks for answers involving backup, virus scanners and firewalls but few were awarded full marks.

Question 2

Most candidates answered a)i correctly, and some candidates wrote down correct formulae in a)ii, however, many candidates lost marks by using incorrect syntax. In a)iii, most candidates were awarded 1 or more marks. Correct answers focused directly on improving the speed of operation of each checkout using technology or training rather than, for example, designating one checkout for less than 10 items. In b), descriptions were often vague and lacked detail and few candidates were awarded one or more marks. In c), many candidates noted that the model could help work out the number of checkouts required in the new supermarket and the importance of investment in high speed checkout technology, but several missed the point and described unrelated design features of a new supermarket.

Question 3

Overall, most parts of this question were answered correctly by most candidates.

Question 4

Overall, most parts of this question were answered correctly by most candidates. In b) many candidates could not be awarded marks as they noted only that, for example, word B was underlined but not that word A was not underlined. Better answers were comparative statements, such as: 'words A and B have different fonts'; word B is bold but word A is normal. In d), many candidates were awarded one mark for noting that screen B would be easier to read but could not go beyond this. Some reasons lacked sufficient detail or were not clearly expressed.

Question 5

Overall most of this question was answered correctly by many candidates. In a), most candidates were awarded one or more marks but a few could not write the instructions in a correct sequence or format. In c)iii some candidates did not realize that the robot needed to cope with the situation and carry on with its task without human intervention. In c)iv a few candidates were awarded 2 or more marks but most candidates were awarded one mark. Descriptions were often vague and not in context, or the meaning of 'feedback' was interpreted in a context other than that of computer control.

Question 6

Most candidates answered part a) correctly. Some candidates answered b) correctly; however, many answers were not comparative descriptions. Most candidates were awarded one or more marks in d)ii; however, few candidates progressed beyond drawing a correct topology and indicating that there would be a networked printer. Diagrams were often unclear. Few candidates related this question directly to their experience of network topologies that they might be familiar with in school.

Question 7

Most candidates were awarded one or more marks on a). Part b) was answered correctly and in full by some candidates but some candidates neglected to record the time both on entry and on exit. In c), most candidates were awarded one or more marks. Many candidates stated all they knew about the benefits of automation without selecting the appropriate features for the context given in the question. Some candidates confused the ICT system described in the question with current charging arrangements to drive into central London. Although there are many advantages and disadvantages in common, there are differences which some candidates overlooked.

Question 8

This question was difficult for most candidates. Only a few candidates understood the context developed in a) although many attempted the question. Perhaps as a result, many reasons given missed the point, or were too general or vague or lacked detail. Only a very few candidates were awarded marks in b). Although many candidates wrote at length, answers did not always focus on the advantages and disadvantages to an individual country and were often not well expressed. Candidates would be well advised to read the question more carefully and plan their answers in the context described rather than making general points that do not relate to the question.

Coursework

General

The majority of centres marked candidates’ work accurately. However, there was a slight increase in the number of centres where the accuracy of marking could be improved. The quality and quantity of the coursework submitted varied, but it was generally well presented. There was a welcome reduction in the number of candidates who produced large amounts of repetitive printed output. There were still a few candidates who produced multiple copies of completed questionnaires or multiple printouts of databases and searches but these were much less common than in previous years.

Tasks addressing the theme of Communicating and Handling Information were on the whole appropriate, although there were a number of candidates who produced a simple presentation. Candidates submitting such tasks may have difficulty demonstrating their achievement of the marking criteria.

The theme of Controlling, Measuring and Modelling was mainly covered with submissions based on spreadsheets. It is still the case that too many of the spreadsheet based tasks that were submitted were no more than data handling tasks. Modelling requires the use of functions and formulae that can alter the outputs when the input variables are changed and the production of “what if” scenarios. Candidates cannot be awarded the full range of marks within this theme if they do not produce a modelling task. For candidates who submitted work for the Full Course (3522), this could be a particular difficulty as they cannot fully meet the requirements of the specification in that the coursework must contain two tasks drawn from each of the specified themes. Fewer candidates submitted control tasks.

Coursework tasks that were awarded high marks were:

- designed for others to use;
- within the capabilities of the candidate and were not unnecessarily complex;
- focused on the task and did not have sub-tasks that were irrelevant to the solution of the problem being attempted, for example, including the design of a poster in a database task;
- enabled candidates to demonstrate the full range of their skills, knowledge and understanding;
- had evidence, and annotation by markers, to support the marks awarded;
- followed the marking scheme headings and structure.

Coursework tasks should allow candidates to demonstrate breadth and depth in their ICT capabilities by addressing an identifiable system which can be used by others. Most centres allowed candidates a free choice for their tasks, although these were vetted for suitability by the teacher. This allowed candidates to demonstrate their strengths and knowledge of the tasks and to produce much more interesting work, and many of these candidates showed pride and ownership of their work. This approach encouraged candidates to document their work more thoroughly, and these candidates generally scored higher marks. However, a few centres provided a very narrow range of tasks that were too similar. This did not always allow more able candidates to demonstrate what they know and can do.

Coursework tasks that were awarded lower marks were often:

- built around an inappropriate report structure making it hard to relate a candidate’s work to the marking scheme;
- tasks that were too structured and directed, giving candidates little chance to make informed decisions of their own;
- tasks that were based upon spreadsheets that were supposed to be modelling but contained no facilities to be able to meaningfully change variables and were effectively data handling tasks;
- procedures to help the candidate solve the problem rather than the candidate’s design of an ICT system for others to use;
- tasks that required the candidate to comment upon existing systems rather than developing their own.

Internal standardisation at the centre

Most centres assessed candidates consistently in line with the marking criteria. However, where more than one teacher marks candidates' coursework at a centre there should be a standardisation meeting at the centre where the consistency of marking throughout the centre is ensured. Where this had been done it was clearly evident but where it was not done inconsistent marking often caused the whole of a centre's marks to be adjusted.

Provision of information for the Moderator

There was a wide variation in the amount of background information provided by centres. Good centres provided moderators with:

- a task cover sheet on each task which clearly stated the theme the task addressed, including a clear indication of which task was Communicating and Handling Information and which was Controlling, Measuring and Modelling;
- details of the introduction to the task, including copies of any task sheets and supporting materials;
- annotation of the candidates' work using the references for each criterion as indicated in the specification and an explanation of the rationale for the award of marks.

Moderation was especially difficult where there was a lack of annotation. This was particularly true when the evidence did not appear to support the award of a mark. Centres are strongly encouraged to annotate their candidate's work since it:

- is a requirement of the QCA Code of Practice and the specification;
- provides guidance and feedback to candidates;
- provides justification for the award of marks;
- is essential for internal moderation;
- assists the external moderation process.

Awarding of marks

Marks can only be awarded when there is evidence to support this. A very few centres awarded full marks based on trivial explanations and little evidence. The criteria for the award of marks are set out within the specification and the support materials and there is detailed explanation of what can or cannot be given credit.

Points of concern in relation to the individual assessment criteria

The major points of concern are discussed in detail below. Many of these points have been mentioned in previous year's reports. Candidates should be encouraged to adopt a systems analysis approach to their work and design a system that could be used by a third party and that meets a defined and identifiable need. Candidates who did not employ this approach tended to gain lower marks for many of the marking criteria.

A: Description of the task to be attempted

Too many candidates described the solution rather than the problem, e.g.; "I am going to design a database (or spreadsheet, etc.) which will and this is how I am going to do the task". This often meant that the analysis and design were very superficial and the evaluation criteria were not clear. The focus must be on the problem, e.g. "Mr Smith / Mrs Brown is having problems recording his/ her sales....."

B: Analysis

While much research was done and some very good analysis was completed, several candidates did not consider alternative solutions to the problem and so failed to gain the higher marks available.

C: Specification

There was an increase in the number of candidates who used measurable performance criteria; however the concept of specifying criteria by which to judge if the solution is a success (or not) was missed by a small proportion of the candidates. These candidates often stated only vague aims rather than measurable objectives for success. Vagueness here also hindered some candidates when they later produced their evaluation. Other candidates produced good specifications that were not then referred to within the evaluation section.

D: Design of the ICT System

In this section, the candidate should outline the solution of the whole task. The design of data collection forms, file structures, etc. should be done at a later stage of the report. A number of candidates confused the design of the layout of spreadsheets or databases with the design of the ICT system. Candidates who provided a structured and logical description of their solution to the problem in a variety of ways tended to be awarded higher marks. Good candidates included detailed and annotated flowcharts, systems diagrams and/or algorithms accompanied by a description of the approach taken to the solution of the task. Several candidates produced a flowchart with no explanation. In some cases, the flowchart was not relevant to the task being undertaken. Some candidates included generic flowcharts that appeared to be copied from text books or elsewhere, and which were not adapted to the task being undertaken. Candidates could improve their work by clearly stating their choices and justifying the methods they have chosen. Few candidates provided evidence that they had thought about how data would flow through their system once it was working, perhaps because they could not visualize their system in use. Many appeared to believe, for example, that the setting up of a database was the end of the development process.

Implementation

Justification of the decisions made by candidates when implementing their solutions is a strong theme running through these sections of the coursework marking scheme. A few centres awarded marks where no evidence or only trivial justification was provided.

E(i) and E(ii): Hardware and Software Resources Required

If a candidate adopts a system design approach to solving the given task for a ‘third person’ then the marking criteria become easier to address. Where candidates tried to solve a problem for themselves (for example cataloguing their own CD collection) they often failed to look at a variety of hardware and software, and decide which would be suitable for their task. They only looked at what they had at their disposal. In these sections the candidates are required to state the minimum resources required to run the proposed system. For example, the minimum backing storage capacity, the minimum speed of processor, or the type of software package to be used, and explain their choices. Candidates should justify their selection of particular hardware or software in relation to other possible choices of hardware or software. Many candidates failed to give satisfactory justification for their choices and provided only a list of the software and hardware used. Some candidates made statements such as “I will use a particular software package because it is the only package we have” or “because it does everything I need”. Even if that is the case, candidates should explain their requirements and how their choices will meet them. A few candidates from some centres included what appeared to be a shared or downloaded reference sheet which had not been developed further, and these were not awarded marks. Some candidates simply listed what software and hardware they had used to produce their work instead of looking at what was needed to run the ICT system that they were developing. This section might be improved if candidates identified the system requirements in the analysis/design phase and then matched their choice of resources to these requirements.

E(iii): Data Collection, Data Capture and Input

Some excellent work was submitted in this section that included both data capture forms and data entry screens but a few candidates confused questionnaires prepared as part of the investigation with the data capture forms required in E(iii), not realising that these should be part of the implementation of the solution rather than the investigation. Many candidates did not provide an explanation as to how data capture forms and data entry screens satisfied the needs of the system, or any indication that these had been designed with regard to clarity, ease of filling in, and ease of transfer to a computer. In these circumstances, it is not easy to determine if candidates had designed the form themselves or used a template or wizard. Only a few candidates gave much thought to data entry when designing spreadsheets. Data entry here could be improved by using features such as comments or even simply highlighting the cells which required data input.

E(iv): Data Verification and/or Validation

The extensive facilities built into most modern software for data validation were used by a large number of candidates who gained the maximum marks; however some candidates did not provide evidence of the use of more than one technique. A few centres appeared to believe that a simple spelling check was sufficient for validation. There were only a few candidates who provided evidence of verification by supplying the original documents and referencing the corrections done; many stated only that data entry had been checked by eye or proof read on the screen. Most spreadsheet tasks were carried out using Excel which provides a variety of validation techniques but if the software being used does not have the facility for automatic validation, candidates should be encouraged to discuss what checks would be desirable. Some of the tasks are such that it is inherently difficult to validate or verify the data (for example, the construction of a Web Page) and here the critique of the difficulty is expressly mentioned in the mark scheme as being worth two marks. A number of centres mistakenly awarded two marks for either good explanations or weak evidence which did not meet the criteria.

E(v): Data and/or Program Structures

This was well done by the vast majority of candidates with some good justification given for particular data structures or formula. The evidence for this was sometimes incorrectly placed in the Design section but credit was still given.

E(vi): Output Format

This section was well done by most candidates, particularly with databases where candidates designed reports, forms and queries. However, despite the guidance in the support materials, some centres gave marks for simply producing a printout without any attempt to design specific formats. Candidates' work in this section could have been improved by asking them to annotate their printouts to explain how these related to their solution. With modelling tasks, where spreadsheets were used, many candidates did not format the spreadsheet differently from its default settings. Graphical output was often produced without any indication as to why a particular type of graph had been produced, or any reasons why it was used as opposed to another type of graph.

F: Testing

Many candidates recognised the need to test their systems systematically, but some candidates did not seem to understand the concept of testing the ICT system and concentrated on 'does this button work' rather than 'does it give the right answer'. To be considered a test the candidate needs to predict an outcome and then test it, providing evidence of the test with either an annotated printout or screen shot. For example it is not a test to say that the search for 'Smith' produced all the records; how do we know it produced them all? It would be much better to say 'I looked at the data and found 5 'Smiths'. I then ran the search and found them all – here is the printout to show this'. The simple production of output is not sufficient grounds to be awarded marks under this section. Candidates should be encouraged to produce a systematic strategy for testing their solution using valid and invalid data and where the outcome is known so that problems with their system can be identified and corrected. They should include the evidence that

this has been done. Candidates who tested their system by letting their friends use it, or who included statements from teachers that they had seen the system working, but did not include evidence, were awarded few marks. Many candidates included in this section the testing of their validation techniques. This is acceptable but candidates should realise that this is only a part of a testing strategy and is not in itself evidence of a comprehensive strategy.

G: User Documentation

Many candidates scored well in this section, particularly where they produced manuals in booklet form, as this section requires that there is separate and clearly identifiable user documentation for the system created. Those candidates who copied the software manual by giving generalised instructions on how to use the software to create the system were awarded few marks. It is important to take into account that the system has been designed for others to use and will possibly be used by strangers. Consequently, instructions for the use of the system must be comprehensive and include technical aspects such as how to modify the system created.

H: Evaluation

A failure to specify suitable performance criteria in the analysis and a lack of a comprehensive, planned testing strategy, limits the ability of many candidates to produce good evaluations. Only those candidates who carefully referred to their performance criteria, and possible future developments, were awarded high marks in this section.

J: Communication within the report

Many candidates were rewarded for the clarity of their communication, and a good standard of spelling, punctuation and grammar. The majority of candidates used the structure of the mark scheme to present their report, and this helped them communicate effectively. Some candidates relied entirely on spelling checkers and did not proof read their work leading to errors. There were some instances of the inappropriate use of ‘text speak’ with its abbreviations and lack of capitals. This section was mostly accurately marked although a very few centres were too harsh.

Administration

Most centres submitted candidates’ work by the published deadlines, although some centres did not and as a result delayed the moderation process. It is possible that this could result in their candidates not receiving their grades on the published date.

Most centres completed the Candidate Record Forms (CRF) accurately and to a high standard which greatly assisted the moderation process. However, centres must be careful to avoid errors in arithmetic and transcription when transferring marks to the CRF and to use the correct and current CRF. A few centres did not include their Centre Declaration Sheet to indicate that internal moderation had taken place.

Most centres sent a correct sample to the moderator as indicated in the AQA regulations; however, the sampling procedure was problematic for a few centres. Centres who did not use EDI and entered marks on the multi-part Centre Mark Sheet often caused problems to the moderator by changing the marks on the top copy only and not making clear the changes to the pink and yellow sheets sent to the moderator. This caused confusion when selecting coursework samples to moderate, and created delays in the moderation process.

Candidates’ work should be securely bound using treasury tags, and candidates should be discouraged from using plastic wallets and/or paper clips. Paper clips are not sufficiently secure and when coursework is taken out of postage sacks it often comes apart, while plastic wallets take extra time to extract and this often damages the work. The two tasks submitted by candidates should be clearly marked as to which theme they address and which task each refers to on the Candidate Record Form.

Mark Range and Award of Grades

Full Course

Foundation tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3522/F	120	120	75.8	11.8
3522/C	80	180	61.5	31.8
Foundation tier overall 3522	--	300	137.3	37.1

		Max. mark	C	D	E	F	G
3522/F boundary mark	raw	120	75	63	51	40	29
	scaled	120	75	63	51	40	29
3522/C boundary mark	raw	80	42	34	26	18	10
	scaled	180	95	77	59	41	23
Foundation tier scaled boundary mark		300	156	131	106	81	56

Higher tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3522/H	120	120	71.4	11.7
3522/C	80	180	116.0	33.7
Higher tier overall 3522	--	300	187.3	40.6

		Max. mark	A*	A	B	C	D	allowed E
3522/H boundary mark	raw	120	89	75	61	48	35	-
	scaled	120	89	75	61	48	35	-
3522/C boundary mark	raw	80	72	62	52	42	34	-
	scaled	180	162	140	117	95	77	-
Higher tier scaled boundary mark		300	238	208	175	143	112	96

Provisional statistics for the award*Foundation tier (2381 candidates)*

	C	D	E	F	G
Cumulative %	32.7	53.6	75.3	90.9	98.2

Higher tier (5669 candidates)

	A*	A	B	C	D	allowed E
Cumulative %	9.9	33.1	62.8	85.3	95.3	97.5

Overall (8050 candidates)

	A*	A	B	C	D	E	F	G
Cumulative %	6.9	23.3	44.2	69.7	83.0	90.9	95.5	97.7

Short Course

Foundation tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3528/F	60	60	37.8	7.1
3528/C	40	90	27.8	16.5
Foundation tier overall 3528	--	150	65.6	19.9

		Max. mark	C	D	E	F	G
3528/F boundary mark	raw	60	41	35	29	24	19
	scaled	60	41	35	29	24	19
3528/C boundary mark	raw	40	21	17	13	9	5
	scaled	90	47	38	29	20	11
Foundation tier scaled boundary mark		150	81	68	56	44	32

Higher tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3528/H	60	60	36.6	6.9
3528/C	40	90	54.2	18.7
Higher tier overall 3528	--	150	90.8	22.7

		Max. mark	A*	A	B	C	D	allowed E
3528/H boundary mark	raw	60	51	44	37	30	19	-
	scaled	60	51	44	37	30	19	-
3528/C boundary mark	raw	40	36	31	26	21	17	-
	scaled	90	81	70	59	47	38	-
Higher tier scaled boundary mark		150	128	110	93	76	57	47

Provisional statistics for the award

Foundation tier (4120 candidates)

	C	D	E	F	G
Cumulative %	22.4	40.8	61.3	79.3	92.6

Higher tier (3635 candidates)

	A*	A	B	C	D	allowed E
Cumulative %	4.3	21.0	48.8	73.4	91.4	96.0

Overall (7755 candidates)

	A*	A	B	C	D	E	F	G
Cumulative %	2.0	9.9	22.9	46.3	64.5	77.5	87.1	94.2

Definitions

Boundary Mark: the minimum (scaled) mark required by a candidate to qualify for a given grade. Although component grade boundaries are provided, these are advisory. Candidates’ final grades depend only on their total marks for the subject.

Mean Mark: is the sum of all candidates’ marks divided by the number of candidates. In order to compare mean marks for different components, the mean mark (scaled) should be expressed as a percentage of the maximum mark (scaled).

Standard Deviation: a measure of the spread of candidates’ marks. In most components, approximately two-thirds of all candidates lie in a range of plus or minus one standard deviation from the mean, and approximately 95% of all candidates lie in a range of plus or minus two standard deviations from the mean. In order to compare the standard deviations for different components, the standard deviation (scaled) should be expressed as a percentage of the maximum mark (scaled).