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ASSESSMENT and QUALIFICATIONS ALLIANCE

Report on the Examination

Information and Communication Technology

Specification A

- Full Course
- Short Course

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General Comments

This was the second year of the new specification in Information and Communication Technology. The standard of performance from the candidates in the written paper continues to improve. However, in this specification, there are elements of the theory that are difficult to teach through the practical coursework and these may need to be taught in separate theory lessons.
Most of the paper was accessible to the majority of candidates and it was very rare to see large parts of the paper left not attempted. Considering the highest grade that can be awarded on the Foundation Tier is grade C, quite a few candidates scored very high marks on this paper.

Question 1

This was generally answered well by most of the candidates from most centres. The majority of them scored well on this question and full marks were common. The most common mistake made by candidates was in either part (a) or part (b) to give a storage device as an input device.

Question 2

Overall, this question was badly answered by most candidates from the majority of centres.
In part (a) most candidates' answers revolved around faster and cheaper without any real explanation of why they would be advantages. Most candidates also ignored the advantages to the company and concentrated exclusively on the customer.
Similarly, in part (b) most candidates' answers revolved around slower and more expensive, again without any real explanation of why they would be disadvantages. As with part (a) candidates also ignored the disadvantages to the company and concentrated exclusively on the customer.

Question 3

In part (a), (i) and (ii) of this questions were very well answered and most candidates gained two or three marks for this part of the question.
Sadly part (b) was less well answered and many of the candidates could not name even one cell format.
Candidates could describe a range of advantages and most were able to gain at least one mark in part (c) for giving at least one advantage of using the spreadsheet to work out the cost of the trip.

Question 4

This was quite well attempted by many of the candidates, as this is now a familiar type of question. However, as was the case last year, full marks were surprisingly rare. Candidates who did not score well on this question usually did one or more of the following: -

- They gave too few boxes, despite the question including a clear example (they may have planned to code the data but they gave no indication of this).
- They did not give enough fields to score well on this question (most of a page was left for the answer and the question was out of eight marks).
- They gave some fields that were wrong/irrelevant e.g. National Insurance Number. Whilst this did not directly lose marks it did not gain marks.

Question 5

Part (a) of this question was quite well answered by many candidates and as might be expected from this type of question, candidates tended to score 4, 2 or 0 marks.
In part (b) the incorrect answer of thermometer was quite common.
Parts (c) and (d) were both well answered by many candidates and the continuous process of a feedback system seemed quite well understood.

Question 6

Part (a) of this question was very well answered by almost all of the candidates who suggested suitable software such as a word processing or a DTP package.
In the first section of part (b) the question was looking for features of the software that could be used to **improve** the advertising leaflet. As in previous years this part of the question had a wide range of answers and was again well answered by many candidates. However, part (b) also wanted candidates to give a **different** reason why each feature would be used. Here candidates' answers were often repeated or too vague to gain marks.

Question 7

This question was answered reasonably by many candidates with very few scoring zero marks. Questions set on operating systems are not usually well answered but giving a list of answers to choose from, appears to have helped candidates to select tasks carried out by an operating system.

Question 8

This question was well answered by most candidates from the majority of centres and candidates appear to have benefited from practical experience of passwords and viruses.
Parts (a) and (b) were well answered and most candidates could select with a reason the most secure/least secure password. In part (c) candidates were able to give at least a partial definition of a virus and had a clear understanding of how it might get onto a school network.
Data encryption was less well understood and correct answers for this part of the question were rare.

Question 9

Answers to all parts of this question were disappointing. Candidates tried to define each part of the question, without ever linking them to the application given in the question.
The application given in this question is a graphic design company that produced detailed designs for a wide range of products. So candidates' answers needed to relate to this, so for example in part (a), possible acceptable answers would include:

- Graphics software often uses/needs lots of memory
- Imported images may be large so lots of memory needed
- Editing images may need lots of memory
- May be handling lots/several images at one time

Question 10

Part (a) was poorly answered by almost all the candidates and very few scored any marks for this part of the question. Most candidates started to describe a possible design for the system that could be used to book the seats themselves rather than factors to be considered for the design of the user interface.
Answers to part (b) were mixed, with a reasonable number of candidates able to name a menu driven user interface but far fewer were able to name a command driven user interface.

Question 11

This question was well answered and full marks were quite common. Common errors were:

- Despite being told to use only the commands in the list, candidates sometimes invented their own commands.
- Some candidates also invented their own units to go with the commands. This was not a serious error and usually only resulted in the loss of one mark.

Question 12

Part (a) of this question was very well answered and the vast majority of candidates were able to give an accurate definition and gained both marks.
Parts (b) and (c) of this question were answered reasonably well and most candidates gained at least one mark for each part.

Higher Tier

General Comments

As with Tier F, this was the second year of the new specification in Information and Communication Technology. The standard of performance from the candidates in this written paper continues to improve. However as with tier F, in this specification there are elements of the theory that are difficult to teach through the practical coursework and these may need to be taught in separate theory lessons.
Most of the paper was accessible to the majority of candidates and it was very rare to see parts of the paper left not attempted. The vast majority of the candidates were entered for the correct tier and low scores were rare.

Question 1

All parts of this question were very well answered by most of the candidates and full marks were quite common. Candidates at this level had a clear idea of input, output and storage devices.

Question 2

Part (a) of this question was very well answered by almost all of the candidates, who suggested suitable software such as a word processing or a DTP package.
In the first section of part (b) the question was looking for features of the software that could be used to **improve** the advertising leaflet. As in previous years this part of the question had a wide range of answers and was again well answered by many candidates. However, part (b) also wanted candidates to give a **different** reason why each feature would be used. Here candidates' answers were often repeated or too vague to gain marks.

Question 3

This question was well answered and full marks were quite common. Common errors were:

- Despite being told to use only the commands in the list, candidates sometimes invented their own commands.
- Some candidates also invented their own units to go with the commands. This was not a serious error and usually only resulted in the loss of one mark.

Question 4

In part (a), (i) and (ii) of this questions were very well answered and most candidates gained two or three marks for this part of the question.
Even at the higher tier, part (b) was less well answered and some of the candidates could still not name one cell format.
Candidates could describe a range of advantages and most were able to gain at least one mark in part (c) for giving at least one advantage of using the spreadsheet to work out the cost of the trip.

Question 5

Part (a) of this question was quite well answered by many candidates and, as might be expected from this type of question, candidates tended to score 4, 2 or 0 marks.
In part (b) the incorrect answer of thermometer was quite common.
Parts (c) and (d) were both well answered by many candidates and the continuous process of a feedback system seems quite well understood.

Question 6

Part (a) of this question was very well answered and the vast majority of candidates were able to give an accurate definition and gained both marks.
Parts (b) and (c) of this question were answered reasonably well and most candidates gained at least one mark for each part.

Question 7

Unlike earlier questions, this one was not well answered by the vast majority of candidates. To answer questions such this, candidates need to have been taught some of the basic functions of an operating system. Most candidates gave at best vague answers and many only scored 0 or 1 mark for this question.

Question 8

Part (a) was poorly answered by almost all of the candidates and very few scored any marks for this part of the question. Most candidates started to describe a possible design for the system that could be used to book the seats themselves rather than factors to be considered for the design of the user interface.
Answers to part (b) were mixed with a reasonable number of candidates able to name a menu driven user interface but far few were able to name a command driven user interface.

Question 9

In parts (a) and (b) the terms LAN and WAN and the differences between them were well know by the majority of candidates. Similarly, in part (c) most candidates could explain the term stand-alone computer.
In part (d), even though many candidates had some understanding of the advantages of a LAN, full marks were rare. Allowing the estate agent to share peripherals and data were the two most common correct advantages.

Question 10

Part (a) was answered correctly by most candidates who obviously saw a clear link back to their practical coursework.
Part (b) however was less well answered and although questionnaires were a common correct answer, few candidates could describe their use or name a second method.
Although **testing** is a major part of the set assignment and the project, few candidates were able to describe the process in any detail. Most candidates only scored 1 or 0 for this part of the question.
Part (d) was well answered and candidates had clearly benefited from describing and evaluating performance criteria in their coursework.

Question 11

This question provided good discrimination between candidates. At one extreme, some candidates wrote three or four lines describing a little bit about the Internet, without ever mentioning advantages or disadvantages to the staff. Whilst at the other extreme, candidates wrote two or three sides of well-argued points, giving clear advantages and disadvantages to those who work at there.

The biggest factors in limiting candidates' marks were:-

- Not giving enough different advantages/disadvantages (the question was out of a possible 9 marks)
- Giving a vague description of the Internet, without ever applying it to the veterinary surgery.
- At least some of the answer should be linked to **high-speed** Internet access.

Short Course

Foundation Tier

General Comments

This was the second year of the new specification in Information and Communication Technology. Most of the paper was accessible to the majority of candidates and it was very rare to see large parts of the paper left not attempted. Most candidates appear to have been entered for the appropriate level.

Question 1

This was generally answered well by most of the candidates from most centres. The majority of them scored well on this question and full marks were common. The most common mistake made by candidates was in part (a), part (b) or part (c) to give a storage device as an output or input device.

Question 2

Part (a) of this question was very well answered by almost all of the candidates who suggested suitable software such as a word processing or a DTP package.
In the part (b) the question was looking for features of the software that could be used to **improve** the advertising leaflet. As in previous years this part of the question had a wide range of answers and was again well answered by many candidates.

Question 3

This question was well answered and full marks were quite common. Common errors were:

- Despite being told to use only the commands in the list, candidates sometimes invented their own commands.
- Some candidates also invented their own units to go with the commands. This was not a serious error and usually only resulted in the loss of one mark.

Question 4

In part (a), (i) and (ii) of this questions were very well answered and most candidates gained two or three marks for this part of the question.
Sadly part (b) was less well answered and many of the candidates could not name even one cell format.
Candidates could describe a range of advantages and most were able to gain at least one mark in part (c) for giving at least one advantage of using the spreadsheet to work out the cost of the trip.

Question 5

This was quite well attempted by many of the candidates, as this is now a familiar type of question. However, as was the case last year, full marks were surprisingly rare. Candidates who did not score well on this question usually did one or more of the following: -

- They gave too few boxes, despite the question including a clear example. (they may have planned to code the data but they gave no indication of this).
- They did not give enough fields to score well on this question (most of a page was left for the answer and the question was out of eight marks)
- They gave some fields that were wrong/irrelevant e.g. National Insurance Number. Whilst this did not directly lose marks it did not gain marks.

Question 6

Part (a) of this question was quite well answered by many candidates and as might be expected from this type of question, candidates tended to score 4, 2 or 0 marks.
In part (b) the incorrect answer of thermometer was quite common.
Parts (c) and (d) were both well answered by many candidates and the continuous process of a feedback system seems quite well understood.

Question 7

Overall this question was badly answered by most candidates from the majority of centres.
In part (a) most candidates' answers revolved around faster and cheaper without any real explanation of why they would be advantages. Most candidates also ignored the advantages to the company and concentrated exclusively on the customer.
Similarly, in part (b) most candidates' answers revolved around slower and more expensive, again without any real explanation of why they would be disadvantages. As with part (a) candidates also ignored the disadvantages to the company and concentrated exclusively on the customer.

Question 8

Answers to this question by and large fell into two distinct groups. Firstly, where centres had taught this part of the course, candidates scored well on this question. However, candidates from centres where this does not appear to have been taught usually scored zero.

Questions 9 to 12 (Multiple Choice Questions)

Generally, these were reasonably answered by most of the candidates. Some candidates wrote the answers as words rather than the corresponding letter but if the right words were chosen, the marks were awarded.

Question 9

Quite well answered, not surprisingly perhaps, the most common wrong answer given was ROM.

Question 10
Again, this question was quite well answered.

Questions 11 and 12
These two questions were less well answered and many candidates still do not appear to be familiar with the term data validation.

Question 13

This question was well answered by most candidates from the majority of centres and candidates appear to have benefited from practical experience of passwords and viruses.
Parts (a) and (b) were well answered and most candidates could select with a reason the most secure/least secure password.
In part (c) candidates were able to give at least a partial definition of a virus and had a clear understanding of how it might get onto a school network.
Data encryption was less well understood and correct answers for this part of the question were rare.

Question 14

In part (a) there was an increasing awareness amongst candidates of the difference between data and information. This led to many candidates scoring three or four marks in part (b).

Question 15

Answers to all parts of this question were disappointing. Candidates tried to define each part of the question, without ever linking them to the application given in the question.
The application given in this question is a graphic design company that produced detailed designs for a wide range of products. Candidates' answers needed to relate to this, so for example in part (a), possible acceptable answers would include:

- Graphics software often uses/needs lots of memory
- Imported images may be large so lots of memory needed
- Editing images may need lots of memory
- May be handling lots/several images at one time.

Question 16

This question was very well answered by almost all candidates and the majority scored full marks for part (a).
In part (b) the majority of candidates were also able to describe at least one step that could be used to prevent back problems.

Higher Tier

General Comments

As with Tier F, this was the second year of the new specification in Information and Communication Technology. The standard of performance from the candidates in this written paper continues to improve. Most of the paper was accessible to the majority of candidates and it was very rare to see parts of the paper left not attempted. The vast majority of the candidates were entered for the correct tier and low scores were rare.

Question 1

All parts of this question were very well answered by most of the candidates and full marks were quite common. Candidates at this level had a clear idea of input, output and storage devices.

Questions 2 to 4 (Multiple Choice Questions)

Generally, these were quite well answered by most of the candidates. Some candidates wrote the answers as words rather than the corresponding letter but if the right words were chosen, the marks were awarded.

Question 2

This question was well answered, not surprisingly perhaps, the most common wrong answer given was ROM.

Questions 3 and 4

Again these multiple choice questions were quite well answered and most candidates gained one or two marks.

Question 5

This was quite well attempted by many of the candidates, as this is now a familiar type of question. However, as was the case last year, even at this tier, full marks were surprisingly rare. Candidates who did not score well on this question usually did one or more of the following: -

- They gave too few boxes, despite the question including a clear example. (they may have planned to code the data but they gave no indication of this).
- They did not give enough fields to score well on this question (most of a page was left for the answer and the question was out of eight marks)
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This question was well answered and full marks were quite common. Common errors were:

- Despite being told to use only the commands in the list, candidates sometimes invented their own commands.
- Some candidates also invented their own units to go with the commands. This was not a serious error and usually only resulted in the loss of one mark.

Question 8

Even on Tier H, answers to all parts of this question were disappointing. Candidates tried to define each part of the question, without ever linking them to the application given in the question.
The application given in this question is a graphic design company that produced detailed designs for a wide range of products. Candidates' answers needed to relate to this, so for example in part (a), possible acceptable answers would include:

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Question 11

In part (a), (i) and (ii) of this questions were very well answered and most candidates gained two or three marks for this part of the question.
Even at the higher tier, part (b) was less well answered and some of the candidates could still not name one cell format.
Candidates could describe a range of advantages and most were able to gain at least one mark in part (c) for giving at least one advantage of using the spreadsheet to work out the cost of the trip.

Question 12

Despite the Data Protection Act becoming a common question over recent years this was not well answered by some candidates. These candidates, often incorrectly thought that the Data Protection Act meant that no data could be given to anyone at anytime and under any circumstances.
Answers to this question bye and large fell into two distinct groups. Firstly, where centres had taught this part of the course, candidates scored well on this question. However, candidates from centres where this does not appear to have been taught usually scored zero.

Question 13

This question was well answered by most candidates from the majority of centres and candidates appear to have benefited from practical experience of passwords and viruses.
Parts (a) and (b) were well answered and most candidates could select with a reason the most secure/least secure password.
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Question 14

This question provided good discrimination between candidates. At one extreme, some candidates wrote three or four lines describing a little bit about the Internet, without ever mentioning advantages or disadvantages. Whilst at the other extreme, candidates wrote two or three sides of well-argued points, giving clear advantages and disadvantages to those who work there.

The biggest factors in limiting candidates marks were:-

- Not giving enough different advantages/disadvantages (the question was out of a possible 9 marks)
- Giving a vague description of the Internet, without ever applying it to the veterinary surgery.
- At least some of the answer should be linked to **high-speed** Internet access.

3521/7/C AQA-set Assignment

The AQA-set Assignment was completed for the second time on this specification, and in general the work was of the required standard. There was evidence to show that more candidates understood the requirements of the tasks, both in terms of the task itself but also the evidence needed to produce a documented solution to the task involved.

Analysis

Candidates were required to analyse the material sent by the Board. This was an assignment based on a garden centre. The requirement was that the analysis was first completed and then presented for marking, before the candidate moved on to design and then implement solutions. The vast majority of centres did this, but some did not then present this analysis as a single, combined set of pages, but chose to place the analysis for each task with the task itself. This does make moderation a little more difficult and centres risk a reduction in marks where moderators are not able to see exactly how the candidate has analysed the problem. It is not acceptable for the centre to ignore the clear instruction to mark the analysis before proceeding with the rest of the work.

What is required is a list and no explanation of the items is expected. The list should identify the problem, state the form of the output, identify the information to be output and the data needed to produce the output. The candidate can identify the latter by making an explicit page and probably a line reference or by copying out or describing the data; no distinction in the marking grid is made between desired outcomes (subjective) and performance criteria (measurable). Identifying and listing them is enough.

Many candidates used the structure, headings and format provided in the candidate booklet; this gave them every opportunity to address the full range of marks in this section, with the 'all' requirement of the marking criteria meaning all including work presented under the correct headings. At times there were repeats under these required headings; candidates do have to 'state the obvious', and many clearly had copied and pasted the requirements where needed. By defining 'some' as more than half, a large number of candidates had the opportunity to achieve a minimum of the 7-8 mark band of the criteria, and evidence showed that many had taken full advantage of this. In general, most of the work presented on this section was appropriately marked, although the 'all' criteria must be borne in mind when awarding a mark of 10.

Having completed the analysis, candidates should, if required, be assisted in identifying the five tasks and their requirements. This prevented those candidates who had not done so from being disadvantaged for the next stages. It also allowed centres to manage the work of their weaker candidates. Some tasks are inherently more difficult than others and not all candidates are expected to complete all tasks, though centres should note that each task is worth the same mark. While much of the differentiation is by outcome, weaker candidates would be better advised to spend more time on the more straightforward tasks. Teachers should annotate the candidates' work to indicate which tasks the candidates have managed to identify for themselves and if they have been helped at this stage. Centres can reveal the whole of the analysis to the candidates at this stage if they wish. They must bear in mind, however, that there is some evidence suggests that candidates who have completed their own

analysis, however flawed, tend to be disadvantaged by receiving the "correct" answer and then having to adjust their thinking to that presented by the analysis in the Confidential Instructions. It may be advisable to consider carefully the feedback that is to be given, particularly to the weaker candidates, who may be better directed in to completing those tasks that are more appropriate to their needs. What centres must not do is photocopy the confidential material and present this directly to candidates.

Most centres did get their candidates to reorganise their analyses into the separate tasks. Most then ensured that the candidates then numbered and titled the tasks according to those given in the Confidential Instructions. This made the moderating process straightforward. While many centres used the marking grid appropriately, there were some cases where it was not completed correctly or fully for all of the candidates and a resulted in a few cases of moderators disagreeing with the way centres arrived at the final mark.

Design

The design section should include two main components:

1. Evidence of how the problem is to be solved, explaining the choices made
2. The software that will be used and the features of the solution that make the software suitable.

Designs are about identifying how the work might proceed. Initial ideas as to how to solve the problem are required. These should be subsequently improved and amended as the problem, and the possible ways of solving it, become clearer. A developed design is one where an initial idea is improved, showing initial outlines and first thoughts and then progressing to an improved design, justifying any choices made.

Designs should include, where appropriate, sketches, descriptions, layout plans, suggestions for formulas and cell types and widths, field details/search criteria and identification of the way the output will look.

A planned design will contain enough detail to explain to a third party the requirements for the implementation, thus enabling anyone familiar with the package being used to carry out that implementation. A useful rule of thumb will be '*... is there enough detail for someone else to carry out the Implementation?'*.

There is no requirement in this section for candidates to produce more than one design plan; a candidate who produces a single page plan of the requirements of a task and includes on this development and reasons for choice can score full marks for this part of the component. Similarly, other candidates who produced more than one plan of say the labels, and then went on to justify reasons for the selection of the final version can be given much credit even though they would still need to progress further and show development of that solution. In several of the tasks producing more than one design may lead to additional work for which no further additional credit could be awarded.

At the lower end of the design mark, candidates will choose software and describe some features of the software. Higher up the mark range, these descriptions will relate more closely to the needs of the solution. The descriptions will focus on how the software solves the problem and not simply on all the things the software can do.

The Design section was attempted reasonably well, though many centres gave very high marks to limited design plans, and the reasoning for the selection of software was sometimes rather little weak or very generic. Candidates who only just produce an outline plan or just limited software features cannot progress beyond the 1-5 mark criteria. Candidates have to explain the suitability of this software for the particular task they are planning to undertake. This explanation needs to be as closely related to the problem as possible and whilst generic justifications can score some marks, candidates should be encouraged to relate the software choice specifically to the requirements outlined in the Analysis section. The ability to do this is enhanced if the candidate does really understand the nature of the task. Good designs were produced by candidates who gave descriptions of what they were doing as well as paper based sketches, where appropriate. These, sometimes very simple, drawn designs can be credited highly, as they can show clearly the thought processes of the candidate. Candidates should be encouraged to show how they have arrived at their final design; some candidates did not use the Design section to explain their ideas. Candidates need to do more than state their design. They must also give reasons and explanations for the particular choices they are making. It is very important that candidates use the Design section to explore and explain how they could attempt to solve the problems presented by the tasks. More expansive designs are required. Candidates need to produce detailed statements of what they plan to do to solve the problem.

The point made at centre training meetings "*could the plans be followed by someone else?*", needs to be emphasised again. Sketches for DTP tasks were usually satisfactory, with many candidates beginning to further develop their plan including reasons for the choices made. More candidates included designs for queries than previously, although there were still a large number of candidates who failed to meet this requirement. For spreadsheet models, often there was a plan showing where data and formulae were to be used but the types of data to be used in the cells and recommended cell widths were lacking. Many candidates did provide a printout of the formulae for the spreadsheet and screen dumps of the query requirements in the Implementation section, with some candidates including the same in their Design section. It should be remembered that design work should not encroach on the Implementation section, and whilst allowance can be made for the cyclic design process, designs should not be done either retrospectively or include work that actually is evidence of the implementation.

Some candidates produced designs that described every step in the process that would be followed to complete the implementation. This is unlikely to actually be design and is not what is required. A design describes ways of solving a problem and does not detail each fine step.

The design of testing plans showed improvement on the previous year, with many candidates identifying what needs to be tested together with the production of test plans against which candidates could compare against the results of testing and come to a reasoned conclusion. Testing needs to be designed, and planned, with the data, and sometimes some of the processes, given within the assignment booklet but candidates must be very clear about what they are doing and how their work is going to be tested. Candidates need to give in their plan

details of the actual specific expected results as well as the data they will use to test. The plan may consist of a copy of a relevant page from the candidate booklet with an appropriate heading and the expected results highlighted or could be in the form of a list or table of expected results. They need to note what the input test data is and where it comes from.

Implementation

For each problem, the solution design should be implemented. Candidates should:

- provide evidence that the task has been implemented
- include earlier versions of the work to show the development of the solution and any improvements, corrections or changes from the design
- annotate printouts or provide written evidence to make it clear what has been done
- carry out changes if any tests show they are needed.

To gain high marks candidates should choose, and clearly justify, the choice of appropriate tools and techniques to solve the problem. They should develop good, planned and creative designs. They should produce clear testing plans. A test of a good design is whether or not another candidate, with a minimum of interpretation, could successfully follow the design to its conclusion.

The Implementation section was, within the ability of the candidates, done quite well, although some centres are still awarding marks in the 37-45 mark band where the implementation provided only a 'reasonably' complete solution, with no annotation or earlier versions shown. The Design mark plus the Implementation mark is worth 70% of the total marks for the assignment, and where there were significant alterations to the centre's mark, it was usually because of over-marking in these areas. These reductions were usually because of the lack of detail in the candidate's report. Examples of earlier work, showing the development of the final solution, are very valuable and are a requirement of the specification and marking criteria. Candidates should annotate this work to explain its relevance. A few examples are sufficient and candidates need to realise that showing development is not the same as revealing errors that they imagine may be penalised, but is a positive process and one that can only be beneficial to them. Those candidates who continually printed page after page showing the processes gone through will obtain credit often in terms of development and some evidence of annotation, but would be better advised to prepare and plan the significant stages they will produce rather than such a repetitive process.

Centres should note that candidates must fully annotate all their work, to explain how they achieved their objectives; this is also included as part of the marking criteria. Where this annotation was present, it was often possible to agree readily with a centre's mark. Without annotation from the candidate, this was more difficult and was often a reason for the adjustment of marks. Many candidates produced many pages of printout for their implementation, without any notes to indicate what the printouts were. The best candidates were able to show the development of their solutions by several annotated printouts. This annotation needs to show the candidate's thinking as well as the processes they followed. A few notes on each page is usually sufficient.

Candidates who printed out early versions of their work and then explained how they were going to improve were credited with more marks than those candidates who simply presented

final versions. These early versions provided some of the evidence to indicate that a candidate understood the work and the techniques used. With such material clearly annotated it was possible to see how the resources the candidate chose to use were appropriate and that they had been used efficiently. This will not be evidenced by the final solution alone.

Marks in the upper range are available to candidates who use appropriate resources and techniques, with a good level of skill, understanding and efficiency. They should produce the evidence in a form that is clearly the solution to the problem and carry out any modifications indicated by the testing.

There was much work in evidence on the implementation that met the criteria for the middle mark bands upwards, although there are centres who consider a reasonably complete solution, which is not annotated and where there are no earlier stages, to be worth 37 – 45; additionally some are not annotating to show how their solution was arrived at to show their efficiency. For others, even though some candidates had annotated their work, the final solution was incomplete or incorrect, but judged by the centre to be complete and correct. On a literal interpretation of the marking criteria, candidates who produce an implementation with no development or annotation shown could not score above the 1-9 marking criteria; however, evidence of the final production is more inherent in certain areas, and therefore the points below were additionally highlighted at the teacher meetings to add further clarification to the marking criteria:

- Where the design does not match the implementation, or there is no design plan, the maximum mark available for the implementation section would be 36, unless there was clear annotation to explain why the design(s) were changed. This would not penalise candidates using an appropriate cyclic design process.

- No annotation but development showing evidence of methods of solution; maximum award 27 for all tasks.

- No annotation plus no earlier version:

DTP/WP/Website	Limit	18 (max)
Spreadsheet etc. (no formulae)	Limit	9 (max)
Data handling etc.	Limit	9 (max)

Testing

This could probably be called “checking” for the Assignment. The candidate must identify and state whether testing is required or not for each problem. A test plan would identify the data needed (all in the candidate booklet) and what the actual expected results will be (again given in the candidate booklet). They should also show how the data will be used to set up the tests. Some candidates at the lower end of the mark range might describe the above but then not be able to follow their plan, or their plan might contain the correct information but be so disorganised and unsystematic that it is difficult to credit them highly. They must produce a record of the results of their tests and describe the changes they will then implement. They may describe these in their implementation section but they will need to be credited in the testing section.

Essentially testing is about entering known data and comparing the output with a pre-stated result. In a spreadsheet for example one test is by entering sample integer values, which allows a hand calculation and check to be done. One checks the rules (formulae) that are used.

In a database the outcome of a search is predicted before the search is made. This expected outcome is then compared with the output when the search is executed. The test is not of the ability of the database programme to search but tests the correctness of the data input.

Testing is an area that candidates in the past have found difficult, although for the second award of this specification showed further improvement on work produced previously. If candidates understand the problem and how the solution is to be used, they seem to be better able to decide how to test their solution. They can then identify the likely errors that could arise and are able to subject their solutions to suitable tests according to a test plan. Candidates often produced only very limited ranges of data that they were going to use to test their solutions.

There was evidence to show that some centres were teaching candidates how to test database solutions and spreadsheets, in preparation for these elements of the work. Testing plans should identify expected outcomes and compare those to the actual outputs. The data required for testing will be given in the assignment booklet and it is not necessary for candidates to do more than the testing required by the assignment. Many candidates limited the mark they could obtain by not providing designs for testing plans for tasks that required such plans. Some candidates described testing but provided little evidence that it had been carried out. It was not uncommon to read that the solution worked; therefore it was OK and had been tested.

Those candidates who went further than the test(s) required of them in the booklet, did so often in preparation for the more difficult testing requirements on the project; it should however be remembered that candidates do not gain any extra credit for this with full marks attainable by using the appropriate data from the Candidate Booklet. Additionally, some candidates carried out ‘tests’ but not the required ones.

For high marks, candidates have to do more than just enter their test data. They have to follow a comprehensive test plan and produce a record of the results. They then have to evaluate the results against their expected results. They should then identify any modifications required.

It should be remembered in most cases the acceptance of ephemeral evidence would not be accepted; the exception to this is the actual evidence that the hyperlinks work when carrying testing for the web page task. Candidates should indicate what is to be tested, have included a plan in the design, indicating the links between various pages, and then produced clearly labelled evidence of testing with a conclusion reached. Teacher confirmation that the hyperlink tests work is needed.

Evaluation

Evaluation still continues to be recognised as being difficult. The process of being self-critical using pre-stated criteria is not easy. In this work, the identification of clear performance criteria in the analysis is fundamental to the later production of a high quality evaluation.

At its simplest level, evaluation is a process of reviewing what was done and what is achieved. What went wrong, and how it was dealt with, is also a feature at this level.

The performance criteria and desired outcomes are vital to success in this section. It is useful to get the candidate to cut and paste them from their analysis or a teacher provided list if that is more appropriate. (If the latter is done then the centre must state this on the Assignment Cover Sheet).

If a candidate has produced poorly defined or even incorrect performance criteria then they could be operating at a level where they were describing what they had achieved and had made some comparison with the intended outcomes. These candidates will tend to do little more than record the performance criteria or restate them. At a slightly higher level, the candidate would be trying to show how the work meets the performance criteria more directly.

To meet the requirement to be describing the effectiveness of the solution, one needs to refer to the solution as both an outcome; a total of a spreadsheet, and as a process, how correct data gets into the spreadsheet. There also needs to be a greater recognition of the overall problem being solved; recognition that the tasks contribute to an overall solution and are not simply separate, stand alone pieces of work.

At the top end, the candidate is truly critical of the process followed and final output produced and is clearly able to evaluate the work, giving a discussion of the solution which shows some of the insights gained through developing a deeper understanding of the original problem.

On the whole the Evaluation sections were appropriately marked, with many candidates producing the desired outcomes and performance criteria as the initial part of the section and using these to produce the required reference to these outcomes, thus giving them an opportunity to address at minimum the middle area bands of the marking criteria. Some desired outcomes and performance criteria may only require simple comments and not require description or discussion and hence the points below were additionally highlighted at the teacher meetings to add further clarification to the marking criteria:

3-4	Candidate indicates they have done the performance criteria (‘yes I did it’)
5-6	Candidate says how they did it or states the effectiveness of more than one performance criteria
7-8	Candidate describes the effectiveness of more than two performance criteria
9-10	Candidate discusses the effectiveness of all performance criteria that require it

The tasks as they appear in the Confidential Instructions did provide some degree of differentiation.

Task 1 (Plant information leaflet) was done well with many candidates producing effective implementations, often in colour. An important point to remember for this, or any other DTP type solution, is that it is not just the final output that is required but additionally the development work required plus the necessary annotation to show the level of skill being used. The lack of these components often reduced possible top box mark criteria work as indicated on the implementation section earlier.

Task 2 (Plant labels) was generally not well done; many candidates produced some evidence of the output required, although not necessarily in the required format. Designs often once again produced these layouts but ignored the design of possible mail merge requirements and what was a quite difficult search criteria for many candidates.

Task 3 (Pond calculator) resulted in many candidates being able to produce a printout of results, although not always in the output format required in the Candidate Booklet. Many candidates clearly found the concept of using a round up function as being difficult. It should be noted here that it would be perfectly acceptable for teachers to provide support to candidates to assist them in overcoming any barriers; anything regarded as the normal teaching process would not incur a penalty; it should be remembered that if help is provided, candidates should only be given credit for the work they have achieved themselves, and annotation should be provided by the teacher to indicate this. More candidates are now producing the evidence of formulae used, which is one of the major requirements of the annotation to support the level of skill.

Task 4 (Web page) produced a range of solutions, many using DTP or word processing and some using HTML. Ephemeral evidence would not normally be accepted as part of the coursework requirements, although this was allowed on the testing component where it was felt that certain methods of solution may be difficult to produce the necessary documented evidence of testing being carried out; it is important that some form of evidence is provided by the teacher to indicate a working solution was produced. Often this was given by the member of staff signing the stages of the testing carried out or including a note at the foot of the testing to indicate evidence of the requirements being produced.

For those candidates using HTML, it should be remembered that not only should the code be listed, but additionally annotation is required to indicate the level of skill being shown.

Task 5 (Plant list system) resulted in many candidates producing the final requirements but with no design of the query involved and/or evidence of the query having been carried out in the implementation. On the testing component, candidates should not only indicate the records to be found, but additionally identify the limited field contents to be selected.

Administration matters

The majority of centres are to be congratulated on the way that they provided the material requested in a timely manner. However, more than a few centres were late with their work. Work was generally well presented though some attention needs to be given to appropriate labelling of the sections of the work, so that the tasks are clearly and easily identifiable. It should be remembered that bulky A4 files and other ring binders are vulnerable and should

not be sent; work should be securely fastened together with no more than two back to back pages per plastic wallet.

The tasks do need to be numbered and identified to match those in the confidential instructions.

The analysis must be marked before the candidates go on to complete the rest of the work. This analysis mark then stands for the rest of the assignment. The marking grid should be used as indicated in the instructions with a cross to indicate the mark range appropriate for each task. The marks then need to be compared to the mark ranges given in the instructions and a mark given for each part of the assignment that matches the candidates' work in each section. If a candidate fails to present any evidence in a section for any given task, then the effect of this zero mark should be taken into account when deciding the final mark. A very small minority of centres still did not appear to have recognised this.

Centres must record any discussions that they have had with the candidate in the section on the back page of the Candidate Internal Assessment Form. It is difficult to believe that some centres have not had any discussions about work with their candidates. The content of these notes can be very useful to the moderator, who can then make some judgements about the degree of help given to a candidate and hence the degree of skill shown by that candidate.

Teacher annotation of candidates' work is lacking from some centres, though this is specifically required in the specification. Some candidates may well have failed to gain marks for sections where there was no teacher annotation as, without this annotation from the teacher, it can be difficult to see why a candidate has been awarded marks. It is evident that centres that did annotate candidates' work were more likely to have their marking accepted and not have marks moderated downwards, which was more likely with centres that did not annotate the work appropriately. The amount of annotation required is not onerous. For a centre to indicate where in the candidates' work particular criteria have been met is sufficient.

Centres must standardise their marking across different teachers. Where this is not done a candidate, whose work may well be marked correctly by the centre, could risk losing marks if a more highly placed candidate's work is found to be over-marked by the centre.

All centres are allocated a coursework adviser by AQA; any difficulties with the requirements of both components of the coursework should be directed to that adviser at any stage in the course.

3521/P Project

The AQA-set Assignment provides candidates with a set structure, requiring a range of skills applying to a number of differentiated set tasks; by providing such a structure, candidates new to this type of work can gradually develop skills from Analysis through to Evaluation on a range of tasks, giving every opportunity for success at individual levels. Although there is no stipulation in the specification as to which practical component should be completed initially, the above structure offers a framework for that component and hence the Assignment is completed first by virtually all centres. The project requirement should offer an opportunity to further develop many of these initial skills, using a much more holistic approach, and taking what were relatively straight forward component requirements in to a further dimension, gradually beginning to close the gap towards higher levels of study.

For the project component candidates are required to submit a report on an investigation into a problem and the implementation of its solution; ideally the solution should comprise a re-usable system. By outlining a scenario at the beginning, candidates will have every opportunity to reach the higher bands, particularly in the analysis, outlining the actual problem rather than any task driven assignment such as the AQA-set Assignment. It should be remembered that unlike the assignment in which candidates have only to list the required tasks, in the project the sub problems should arise from the initial exploration of what the actual problem is. Hence the scenario at the beginning must, especially for the higher mark bands on the Analysis, give sufficient detail to generate the problem and its sub problems. If this detail is not included then the 'problem' effectively becomes just listing tasks, thus restricting the mark award.

The range of topics selected by candidates was in most cases appropriate but centres must take note that the AQA-set Assignment is not the model to follow blindly to produce a good project; some centres are not realising that this is the main reason they are finding their marks are adjusted downwards. To achieve higher marks for the project, candidates need to understand the holistic nature of the problem centred round a detailed initial scenario; those providing a task driven approach displaying only a passing knowledge and understanding of the requirements of a sketchily drawn out scenario could not access the higher mark bands. To do this, they need to understand and clearly communicate through their report an understanding of what the scenario needs. It would be a good idea to focus them on jobs that need to be done and then to produce a solution that fulfils the requirement. This should include a well understood rationale for what is to be done.

Centres should dissuade candidates from entering into task identification too soon. Tasks should not simply appear but should come from this comprehensive description of the problem. The scenario itself will lead to the tasks and, very importantly, the performance criteria.

The assignment is designed to lead candidates into analysis and design work. Since these processes may be relatively new to many candidates, the AQA-set Assignment contains much of the analysis and many of the design ideas. The Assignment is deliberately task-oriented with the aim of ensuring that candidates are tested over a range of skills and given the opportunity to show how well they can do over a range of tasks. Though the tasks all fit into the same general theme, they are not as integrated as would be expected from a project. There is a greater wholeness to be found in good project solutions and this cannot be

achieved using the format of the AQA-set Assignment. The stages may look similar, as they are, but they are not the same.

Initial discussions between the teacher and candidate will play an important role in the choice of project to be undertaken and the eventual method of solution to be used.

Whilst the project is looking at a holistic system approach, it may well be that candidates of a certain ability may be better 'guided' into a limited mark task driven approach; evidence in the work presented suggests that whatever method is used, candidates of all abilities tend to produce a better quality project when they have a genuine interest in the topic to be undertaken, and where genuine research can be carried out.

At the higher levels, it is important that candidates tackle a problem that is enough to provide them with necessary breadth and depth to achieve the higher marks but do not take on the solution to a problem that will be unachievable in the time available. A feature of some projects, which were subsequently moderated downwards, was that of simplistic (though often well executed) problems and solutions that lacked breadth and/or depth. Lots of tasks at a middle level do not equate to one holistic problem at a higher grade. Projects whose solutions were limited to simple database work or programming only, were usually not able to achieve high marks. It is unlikely that candidates can produce programming solutions that are truly better than generic software is able to produce. Some limited macro programming is acceptable where the macro adds functionally that would be difficult to achieve from within the software being used. Similarly, very little evidence has been provided of true systems that are centred round a web based theme; those candidates who produce a set of pages and link them cannot achieve high marks, and additionally those including web pages as part of the solution to a broader theme should consider the actual worth of that component. Is it part of the system or just an 'add on' to try show more breadth? Projects that truly tried to solve problems and used the appropriate software were more successful. Some excellent work was seen from some centres.

Candidates at the higher levels in particular may decide eventually to use a single, powerful package (e.g. Microsoft Access, allowing for complex usage at the higher levels e.g. queries, reports, mail merge etc.) to produce their solution or use linked packages; whatever method is used the re-usability **must** be identified together with detailed identification of the desired outcomes and performance criteria. On the work submitted, more candidates were tending to use a single package approach than had previously been seen, resulting in more compact documentation and providing an extension of earlier skills and efficiency plus a link to higher levels of ICT study, although the majority of centres still are using a range of packages and allowing for the links using integrated software. As indicated in the specification, either of these methods is appropriate if suitably documented.

Links between the sub-problems should be in evidence and with this in mind candidates may be well advised to use a holistic approach to all sections to ensure these links are explained throughout the coursework.

Two significant features in this specification relating to projects are reusability (now included in various parts of the marking criteria) and testing plans. Both these need attention from centres that are hoping to gain high marks for their candidates. The main evidence for the reusability features of a project solution will be found in the Analysis and Design sections, with supporting evidence in the user-guide. Candidates should consider the use of the

solution they outline at a later date. What happens next week? Next year? How is new data added to the system? Not all aspects of the project need to exhibit this reusability, but there must be evidence of this where appropriate. Projects must be selected that do allow such reusability, and candidates appear to have difficulty in this area, where the concept of over time and doing day to day work for the scenario is not well tackled and documented.

Analysis

Analysis was sometimes disappointing and candidates did not always take enough time to consider significant aspects of the problem. Many, although showing clear signs of ability, tended to adopt a task-oriented approach rather than the essential problem solving work that is required by this specification. The problems need to come out of the analysis and some centres were able to encourage candidates to do exactly this. Each problem needs to be broken down into sub-problems. The better work shows that the candidate has an appreciation of the audience and the uses of the solution they are developing and these candidates do explore the problem and only eventually come to a conclusion as to the precise nature of the issues involved. Less good work reaches conclusions about the problems much sooner. It was not uncommon to find the whole analysis taking no more than a couple of sides of A4 paper. This volume of work is not sufficient for a full analysis and consequently would not be highly marked. It would be very valuable for the centre to state this in their own annotation of the candidates' work.

Design

Design sections were often weak where candidates did not offer much in the way of design. They chose the way they would solve the sub-problems, with little regard to the information requirements. Candidates need to fully explore the possible systems that could provide solutions, and justify the choices they made. They need to identify the techniques that they feel are most appropriate and use the software tools appropriately. Candidates need to keep in mind their analysis and constantly refer to the problem being solved. If they have identified effective performance criteria they are more likely to produce evidence that can be seen as a good solution to the problem. They will attempt to link the various parts of the problem where this is appropriate and address which parts can be re-used and how. If the system is analysed from the point of reuse then the design should reflect that. How is the solution designed to handle the transactions that the scenario requires?

An additional requirement of the marking criteria in this section is the test plan. Candidates should indicate what is being tested and why, with the test plan being designed to show how well the system responds to the information handling/processing required by the scenario. For higher mark awards, candidates need to create comprehensive test plans to allow for erroneous and extreme data sets together with relevant validation testing. For many candidates these seem too much of an afterthought.

The notions that the system has to do jobs for the scenario seems to pass some candidates by, and tables of testing are constructed often at the testing stage (not at the design stage as required). Test plans seen were often trivial and only show simple functions showing such as, on a database, adding and deleting records etc. It is often not focussed on what it needs to do and does not show that it does the information processing reliably.

Implementation

Implementation continues to be reasonably well done by many centres, although there were many instances of high marks being awarded where candidates had produced solutions to what were simple tasks. It is here where the report should really come into play, with the candidates clearly indicating the levels of skill, knowledge and understanding of the software tools that are being used to achieve the solution. It should be remembered that efficient and complex use of one package systems is required, which currently are not always being displayed to sufficient depth. There are some issues affecting candidates who do not annotate and explain their work well. These candidates risk having their mark adjusted because there is not enough evidence for the award of the skill level. It must be noted that moderators may not be familiar with the particular software being used, so they need the candidate to annotate the work in order to be able to make a judgement. Production of evidence is not just printouts of the answer, nor is it just lots of screenshots. It is a mixture of the two. Candidates should be reminded that they are producing a report into their solution that shows evidence of levels of skill etc. They have to convince a third party that they really do know and understand what they are doing.

Candidates should additionally be reminded that they should not misconstrue development as tinkering with the cosmetic aspects of the work; structural aspects need to be dealt with more evidence of worth rather than just cosmetic.

Modifications as a result of testing were still rare. This was probably because of the very limited testing that many candidates undertook. Candidates who scored high marks generally recognised the links between various parts of their solution. They moved data around where appropriate, and where possible, identified advantages to the user in not duplicating material. They produced not only good solutions but also efficient solutions where the power of the software and of the particular systems used was most effective.

Testing

The Testing section is still where many candidates are weak. Much more detail is required on this component and candidates need to be taught how to test and how to set up testing plans. The testing plan, which can be copied and pasted from the design stage, would identify how the developed solution would be used and would identify typical data. This test data would be entered into the system to check the functionality and correctness. Candidates would document this fully, giving screen shots with annotation where appropriate, to show that the testing had been carried out and the to show typical outputs. Modifications would also be documented. Erroneous data would be entered and the outputs compared against stated expected results. Extreme data would also form part of the testing. The candidates would comment on the output from this testing and say how they would alter their system to deal with such input. For many candidates testing seems to be no more than a statement such as ‘I tried it and it worked’. It is very important that candidates understand validation of data on entry, for successful treatment of erroneous data. If the software being used does not allow validation rules, then the candidate can simply explain how they would incorporate validation and what would happen to data entered. The process should be more than just a

check of the generic software validation routines; the testing should be specific relating to the problem being undertaken. As indicated at the teacher meetings, to reach the top two boxes on the marking criteria, candidates require to produce a comprehensive test plan with test data not only in the expected range but also include extreme and erroneous data.

Evaluation

Evaluations are very good where candidates have identified performance criteria in the analysis section for the whole system. If these are used to identify how well the solution solves the problem, then it is relatively easy to gain high marks. However some candidates are not using these performance criteria. Evaluations must relate directly to the holistic nature of the problem initially identified. If the problem is in fact a set of tasks, then candidates will find this process difficult, if not impossible. All they can report is that they succeeded in completing the task. Unfortunately they do not in these circumstances evaluate the solution, so gain little credit.

User Guide

User guides are often full and detailed and they offer one of the main vehicles for describing the reusability of the solution. The user guide needs to be divided into sections and better guides will include formatting techniques e.g. table of contents, index, footnotes etc. together with the use of screen dumps to provide evidence to support the user. Candidates must avoid the temptation to produce a software manual. This is not what is required. The assumption can be made that the end-user can use the software (as indicated in the implementation section), and therefore the user guide should inform the user how to use the built system to do the required jobs

Administration matters

There is a need for centres to:

- internally standardise. If this is not done then candidates risk having downward adjustments applied because of the inaccurate marking of one teacher on one set of students' work;
- ensure that, as a different moderator is allocated to the Assignment component, full paperwork for the required component is forwarded to each moderator;
- ensure that paperwork has been completed as per the specification, as delays are inevitable if the correct documentation is not provided;
- remove work from bulky folders before posting to the moderator;
- ensure that, if plastic wallets are used, all the work is visible without the moderator having to remove it from the wallets;
- ensure the correct marking criteria is used. Odd centres still used the old specification grids allocating a separate mark for SPG which is now, for this specification, incorporated in to the Analysis, Design and User Guide components.

- inform AQA if the work is likely to be delayed (several centres were very late in despatching the work to the moderator);
- annotate the work as required by the specification. Teachers must show why they have awarded the marks. They potentially disadvantage their candidates by not doing this.

Mark Ranges and Award of Grades

Full Course

Foundation tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3521/F	80	140	70.2	10.4
3521/7/C	100	105	31.3	16.0
3521/P	100	105	27.5	17.1
Foundation tier overall 3521	--	350	129.2	40.4

		Max. mark	C	D	E	F	G
3521/F boundary mark	raw	80	40	36	32	29	26
	scaled	140	70	63	57	51	45
3521/7/C boundary mark	raw	100	41	31	22	13	4
	scaled	105	43	33	23	14	4
3521/P boundary mark	raw	100	45	35	25	16	5
	scaled	105	47	37	26	17	5
Foundation tier scaled boundary mark		350	147	125	103	81	59

Higher tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3521/H	80	140	86.5	9.4
3521/7/C	100	105	59.3	19.6
3521/P	100	105	54.8	20.6
Higher tier overall 3521	--	350	200.8	49.0

		Max. mark	A*	A	B	C	D	allowed E
3521/H boundary mark	raw	80	68	58	48	39	27	-
	scaled	140	119	102	84	68	47	-
3521/7/C boundary mark	raw	100	82	68	54	41	31	-
	scaled	105	86	71	57	43	33	-
3521/P boundary mark	raw	100	77	66	55	45	35	-
	scaled	105	81	69	58	47	37	-
Higher tier scaled boundary mark		350	273	235	197	159	117	96

Provisional statistics for the award

Foundation tier (10366 candidates)

	C	D	E	F	G
Cumulative %	34.2	53.5	72.6	88.1	96.5

Higher tier (12833 candidates)

	A*	A	B	C	D	allowed E
Cumulative %	7.3	25.6	54.2	79.7	95.2	98.3

Overall (23199 candidates)

	A*	A	B	C	D	E	F	G
Cumulative %	4.2	14.7	31.1	60.3	77.4	87.4	93.9	98.5

Short Course

Foundation tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3527/F	80	80	41.2	11.0
3521/7/C	100	120	26.6	14.7
Foundation tier overall 3527	--	200	67.8	23.8

		Max. mark	C	D	E	F	G
3527/F boundary mark	raw	80	37	32	27	22	17
	scaled	80	37	32	27	22	17
3521/7/C boundary mark	raw	100	41	31	22	13	4
	scaled	120	49	37	26	16	5
Foundation tier scaled boundary mark		200	76	63	50	38	26

Higher tier

Component	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
3527/H	80	80	54.3	9.5
3521/7/C	100	120	61.9	21.2
Higher tier overall 3527	--	200	116.2	31.5

		Max. mark	A*	A	B	C	D	allowed E
3527/H boundary mark	raw	80	70	61	52	43	34	-
	scaled	80	70	61	52	43	34	-
3521/7/C boundary mark	raw	100	82	68	54	41	31	-
	scaled	120	98	82	65	49	37	-
Higher tier scaled boundary mark		200	163	139	115	92	71	60

Provisional statistics for the award

Foundation tier (12026 candidates)

	C	D	E	F	G
Cumulative %	34.9	55.4	76.8	91.1	97.4

Higher tier (9772 candidates)

	A*	A	B	C	D	allowed E
Cumulative %	7.0	26.3	52.8	77.2	91.4	95.9

Overall (21798 candidates)

	A*	A	B	C	D	E	F	G
Cumulative %	3.3	12.5	25.2	55.1	72.6	85.9	93.4	96.8

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).