



## **General Certificate of Education**

# **Applied Information and Communication Technology 8751, 8753, 8756, 8759**

**IT10            Advanced Spreadsheet Design**

## **Report on the Examination**

*2009 examination – June series*

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## Unit 10: Advanced Spreadsheet Design (IT10)

### General

All candidates provided evidence of setting up a spreadsheet system for a client, revealing a good knowledge of the chosen software.

**In many cases the client appeared to be made-up. When candidates had a real client, they were more easily able to establish the client's needs. When candidates had a fictitious client, this was much more difficult and usually this meant that the candidates could not access all available the marks.**

As noted in previous Examiners' Reports many candidates submitted large quantities of hundreds of pages containing dozens of similar screenshots that added little or nothing to the material required for assessment. Some of the better scripts, achieving high marks, were very succinct with the contents focussed on the assessment criteria for the unit.

Some candidates submitted instructions on how to set up the spreadsheet. Others gave a fully illustrated step-by-step history of how they set up the spreadsheet. Neither is necessary, nor do they add to the marks that may be awarded. Scripts submitted should focus on the requirements as described in the list of items contained in the Candidate Booklet.

Clearly some candidates have not made sensible use of the available time by doing the above. Being concise is important in ICT reports and candidates should be reminded that quality is likely to achieve more marks than quantity.

### Organisation

A few candidates failed to number the pages of their scripts as instructed in the Candidate Booklet. A proportion of scripts were not submitted in the appropriate order (a) - (k), as requested in the candidate booklet. The use of appendices should be discouraged.

Some candidates submitted work including blank or upside-down pages. As this is an applied course and the tasks are linked to the needs of a client, this lack of checking or care is disappointing.

### Choice of project

Several candidates submitted booking systems, for example booking facilities at a leisure centre or renting a DVD. Spreadsheet software is clearly not the most suitable software for database applications like these and candidates will not be able to access all of the marks as a result of attempting an inappropriate application.

Several candidates submitted relatively un-ambitious projects that used few complex features of the software.

Many candidates submitted invoice systems. These are very good applications, but only in a few cases did the output actually look like an invoice, with the client name, address, telephone number, date, invoice number, etc. Again this suggests that there was no real client involvement as a real client would insist on these items appearing on the invoice.

Candidates should be steered away from simplistic or unrealistic scenarios and systems that are better suited to database applications. AQA would like to see more imaginative applications

of spreadsheet software such as expenses, claim forms, stock control, order books, and quotation systems.

Some creative and complex spreadsheet systems were seen, including applications for other subject areas such as Physics, which make use of a variety of software functions of spreadsheets which are relevant to the candidates and which are to be encouraged.

### **Investigation Time**

#### **Task (a) - Time plan**

Most candidates attempted to break up the tasks and allocate an appropriate amount of time to each one. Those who thought about this carefully and broke the tasks down into appropriate smaller subsets achieved the second available mark.

Several candidates simply repeated the tasks (a) - (k) from the Candidate Booklet, rather than thinking about what they actually needed to do. Simply repeating the tasks in the Candidate Booklet will not achieve any marks.

#### **Task (b) - Background information**

Candidates are expected to answer the question, 'Why does the client need a spreadsheet and how will it benefit them?'

Most candidates described why a spreadsheet was needed. Those who went on to explain the benefits to the client of using the spreadsheet solution gained the second mark available.

Candidates are also expected to identify the user, consider their skill level and state how this will affect the designs for their proposed solution. Most candidates identified the user and the skill level and were awarded one mark. Those who went on to describe how this would affect the design of their system, by for example discussing the need to prevent invalid data, gained the second mark.

Some candidates said that as their client knew very little about spreadsheets, the spreadsheet would have to be simple. These missed the point that the candidate may need to set up a system that performs a complex task but is easy for the client to use because of their lack of expertise.

#### **Task (c) - Client needs**

Nearly all candidates produced a list of some client needs. Better candidates gave these needs in detail and explained how this would affect the design of their proposed system.

Some candidates included such statements as 'the client needs are to include six advanced software features' or 'my client wanted macros.' These were not needs of the client but the requirements of the Task and gained no marks. Modifying these statements to explain what information the client needed would have gained some marks. For example, stating that 'my client wants to be able to choose from a list of components', 'my client said that she wanted to prevent the accidental deletion of the contents of the output reports' are clearly stating the needs of the client.

Some candidates did attempt to describe the inputs, processes and outputs required, though few provided much detail, if any at all. It was rare to see any mention of input or output formats,

or to see sample input and output data. Describing the required inputs, outputs and the processing needed to produce these outputs is an important part of understanding the needs of the client and should be a precursor to breaking them down into the constituent parts, and then determining how the system will meet those needs.

Some candidates listed the required hardware for the solution, such as input devices rather than the data that has to be input. This was a misunderstanding of the assessment requirements and did not gain any marks.

#### **Task (d) - Evaluation criteria**

On the whole this was done well, but some candidates simply repeated their client's needs followed by a question mark to show that these were evaluation criteria, which is insufficient to gain marks.

A common evaluation criterion was 'Have the client's needs been met?' without breaking this down into smaller parts. The evaluation criteria should be based on the client's needs and lead to a comprehensive test plan. For example, referring to the client need mentioned in item (c) a suitable criterion might be 'Can a user of this system accidentally delete the contents of the output reports?' This would lead to an item in the test plan – 'I will test that the contents of the output reports cannot be deleted accidentally by trying to delete them.' This may need to be broken down further for the plan to be sufficiently detailed.

#### **Task (e) – Designs**

Most candidates produced annotated designs that could have been implemented quite easily by a third party.

Few candidates annotated their designs by making reference to client needs or included client comments about the designs.

Many candidates produced designs which were untidy and unclear. The use of a ruler might be helpful in producing designs. This is an applied course and these designs are intended to be shown to the client for approval. As a consequence, designs should be tidy and clear.

#### **Task (f) - Test plan**

Although candidates generally managed to produce a test plan, rarely did they describe their test strategy. A test strategy indicates how, with what and when the system will be tested. From this a detailed test plan can be written. Test plans should enable the candidate to test that the client's needs and the evaluation criteria have been satisfied.

As part of their test strategy candidates should define sets of test data for which the expected outcomes can be accurately predicted. Many candidates had test plans that tested macro buttons and validation to exhaustion but did not test that the spreadsheet calculations were correct, or that input data produced the correct outputs. As a result few candidates gained all the marks available.

#### **Controlled conditions**

Centres are reminded that controlled conditions means examination conditions and that clear guidance is provided in the Teacher's Notes about what is and what is not allowed. Any queries about this should be addressed to the relevant Subject Manager at AQA.

Students should be reminded that no electronic files, including image files, may be taken into the controlled conditions sessions.

Students should not be allowed to have access to their normal user areas or internet access and email during the controlled conditions. Access to these does contravene controlled conditions rules and these facilities should be disabled by the centre during the controlled conditions sessions.

### **Task (g) - Testing**

Few candidates tested both discrete parts of the system and the system as a whole.

In their testing candidates should test that the actual outcomes of testing, with known data sets, match those that are expected.

Some candidates provided excessive amounts of evidence that testing had been carried out by, for example, showing screenshots of inputs, resultant outputs and each number being entered into a calculator program. Some provided very repetitive screenshots that showed numerous similar items being tested. These candidates gained no additional marks to those who produced a screenshot of the input and output and annotated it to explain how this compared with the expected result.

Some students demonstrated that they understood the purpose and function of testing through their use of sensible, predetermined data sets that reduced the number of tests that were required.

### **Task (h) – Implementation**

Some very good examples of the use of spreadsheet software were seen. Candidates generally did not do enough to explain how the spreadsheet system that they had created met the needs of the client, by referring back to the original description of the needs.

The best candidates, however, linked much of their work to the client needs stated in task (c).

Common deficiencies with documenting the implementation of the spreadsheet system, often resulting in some of the available marks not being gained, included:

- Screenshots cropped so that cells mentioned in formulae were not visible, making it impossible to see whether the formulae referred to were correct
- Screenshots cropped so that formulae were not visible
- Screenshots cropped so that sheet names and file names had been removed
- Poor colour choice so that screenshots were not legible
- Screenshots being too small to read

Some candidates printed worksheets in formula view, showing exactly what formulae they had set up. This is recommended, as it provides the examiner with the information required to fully assess the system being developed.

In many instances a large amount of superfluous material was included in the submitted work. Such items as, for example, guides to using Microsoft Excel, user documentation for the developed system, hardware and software requirements for the client and screen-by-screen implementation reports.

Candidates do not need to document every step of how they used every feature of the software, showing things such as recording a macro or formatting the borders of some cells. It is sufficient to show the completed feature, such as the coding of a macro, annotated to show what it does, or a screenshots of the cells with the borders formatted, annotated to show why this has been carried out.

Few candidates seemed to understand what is meant by a reusable spreadsheet system; that is, one that can be used again and again, either by using templates to set up a blank worksheet or by creating automated facilities to delete old data.

Some candidates listed the advanced features that they had used, though others claimed credit for features which are standard and not advanced, such as SUM(), simple formulas or creating a chart. A list of suitable complex features may be found in the Specification.

Several candidates specifically highlighted where they stated that the spreadsheet met the client's needs. Others had inserted a section at the end of this task stating how their client's needs were met by the system. This made it clear to the examiner that they understood what they were attempting to do.

### **Task (i) – Evaluation**

Many candidates used their evaluation criteria and the client's needs in their evaluation and so gained some of the available marks. The best candidates provided evidence in the form of test results and screenshots to demonstrate that these criteria had been met. These critical evaluations gained higher marks than those that were highly subjective.

### **Task (j) - Time planning**

Most candidates did monitor their progress against their original time plan and those candidates who explained, rather than stated, any necessary alterations achieved two marks.

### **Task (k) - Written communication**

Candidates had made a lot of effort to ensure that their work was well described, using good technical language, as well as checking their work for spelling and grammar mistakes. This resulted in many candidates gaining three or four of the available marks.

### **Mark Ranges and Award of Grades**

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.