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Certificate of Education

GCE Applied ICT
8751, 8753, 8756 and 8759

IT10 Advanced Spreadsheet Design

Report on the Examination

2010 examination - January series

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Unit 10 Advanced Spreadsheet Design (IT10)

General comments
All candidates provided evidence of setting up a spreadsheet system for a client, revealing a good knowledge of the chosen software. Some candidates produced a very high standard of work which was very pleasing.

In many cases the client appeared to be fictitious. Where candidates had a real client, they were more easily able to establish the client's needs. Where candidates had a fictitious client, establishing the client needs was made much more difficult and a consequence of this was that lower marks were generally achieved.

It is not necessary to submit pages of screenshots showing how the spreadsheet system was set up. Examiners need to see evidence of the final spreadsheet system and its features, presented in as concise a way as possible.

Organisation
Some candidates did not number the pages of their scripts, though this instruction is given in the Candidate Booklet. Nearly all scripts were submitted in the appropriate order (a) - (j), as requested.

Choice of project
Several candidates submitted projects such as systems for booking facilities at a leisure centre, or renting a DVD. 'Database type' systems such as these are not generally suitable for a spreadsheet system.

Several candidates submitted teacher's mark books or similar relatively un-ambitious projects which provided few opportunities to use complex features of the spreadsheet software and were thus less likely to achieve high marks.

Many candidates submitted invoice or quotation systems, but only in a few cases did the output actually look like an invoice or quotation, with the client name, address, telephone number, date, invoice number, etc. It is likely that a real client would insist on these items appearing on the invoice.

Candidates should be encouraged to attempt more imaginative applications of spreadsheet software such as expenses claim forms, stock control, order books, and quotation systems.

Investigation Time

Task (a) - Time plan
Most candidates attempted to break up the tasks required and allocate an appropriate amount of time to each. 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) - (j) from the Candidate Booklet rather than thinking about what they actually needed to do. Simply repeating the tasks in the Candidate Booklet does not get any marks.

Task (b) - Background information
Candidates are expected to answer the question, 'Why does the client need a spreadsheet and what benefits will it give 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 levels and were awarded one mark. Those who went on to describe how this would affect the design of their system by, for example, preventing the input of 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. This did not demonstrate sufficient understanding, of the need to relate the user's ability to the use of the system, to be awarded a mark.

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 statements such as 'the client needs are to include six advanced software features' or 'my client wanted macros.' These were not needs of the client, but requirements of the Specification and gained no marks. Typical client needs that did gain marks were statements such as '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'. These do clearly state the needs of the client.

Few candidates described the inputs, processes and outputs required in much detail, if at all. It was rare to see any mention of input or output formats, or to see sample input and output data. Some candidates did attempt to describe the processing that would take place.

Describing the required outputs, inputs and the processing needed to produce these outputs is an important part of understanding the needs of the client by breaking them down into the constituent parts. Only then can the candidate gain the highest marks by describing how their proposed 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 is not needed and does 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 as evaluation criteria.

The evaluation criteria should be based on the client 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 become sufficiently detailed.

Task (e) – Designs
Most candidates produced annotated designs that could have been implemented quite easily by a third party.

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

Designs should be produced neatly in order to discuss them with the client and gain their approval.

Task (f) - Test plan
Although candidates generally managed to produce a test plan that tested functionality, rarely did they describe their test strategy. A test strategy describes how 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.

Prior to testing candidates should choose sets of test data for which the expected outcomes can be accurately predicted. Often only one set of test data was used to test that spreadsheet calculations were correct. Other sets of test data should enable testing with extreme and erroneous data.

Controlled conditions
Centres are reminded that controlled conditions means examination conditions. Clear guidance is provided in the Teachers' Notes about what is and what is not allowed.

Candidates should be reminded that no electronic files, including image files, may be taken into 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 and note any changes that may be required as a 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.

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.

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

There were common problems with documenting the implementation of the spreadsheet system. These often resulted in some of the available marks not being gained, and included:

- Screenshots cropped so that cells mentioned in formulae were not visible, so it was 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 formulas 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 there was a large amount of superfluous material in the submitted work. This included, for example, guides to using Microsoft Excel, user documentation, 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 features of the software, such as recording a macro or formatting the borders of some cells. It is sufficient to show the completed feature, such as the macro code, 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) - 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 (j) – Evaluation
This was the first series where item (j) has up to 10 marks available for the evaluation of the spreadsheet solution, self evaluation and written communication.

The best candidates used their evaluation criteria and the client's needs in their evaluation, providing evidence in the form of cross-referenced test results or screenshots to demonstrate that these criteria had been met. They also identified their own strengths, weaknesses and areas for improvement.

The best candidates wrote clearly and fluently. Their work was well described, using good technical language, as well as being checked for spelling and grammar.

Mark Ranges and Award of Grades
Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.