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ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Education

Applied Information and Communication Technology 8751, 8753, 8756 & 8759

IT10 Advanced Spreadsheet Design

Report on the Examination

2007 examination - June series

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Introduction

This was the first session with availability of all of the units for both the user and practitioner awards at A2 and the second session for AS. The general standard of work seen across the AS units showed a definite improvement over the last session. The general standard of work across the A2 units was very pleasing with much creative work seen and clear indications that candidates with a wide range of abilities are succeeding with this Specification. This of course is inevitably not true of all candidates. Many centres should be congratulated on their approach to these courses as they have embraced the meaning of Applied ICT. Some centres, however, do need to consider the approaches taken to some of the units so that they can help candidates to attain the best possible marks. Centres are encouraged to make full use of the advice, materials, such as the Teachers Guide, and training available to them and to attend the feedback meetings for the A2 units and standardisation meetings that will be held in Autumn 2007 for both AS and A2 units.

Unit 10: Advanced Spreadsheet Desgin (IT10)

This was the second series for the examination of this unit. The requirement of the examination is to create a spreadsheet system for a client. Candidates are allowed time for research and design work (the investigation time), then a period of Controlled Conditions during which candidates are expected to produce their spreadsheet system and an evaluation of the system and their own performance.

General comments

The majority of work seen was presented appropriately, and submitted in the order that the tasks were listed in the Candidate Booklet. Centres should remind candidates however that all pages should be numbered. This includes work produced during both the Investigation Time and Controlled Conditions, and may be done by hand if necessary.

Some work was not bound. Treasury tags are sufficient to ensure that work reaches the examiner in the correct order.

Nearly all candidates provided evidence of setting up a spreadsheet system. However the systems were generally not ambitious and the level of complexity of the final systems was disappointing for A2 candidates.

Although most candidates used many complex spreadsheet facilities, these tended to be added on to a system rather than being used as an integral part of it.

Centres are reminded that all parts of the task set in the Candidate Booklet form the assessment for this unit, and that only work produced independently by candidates should be included. They are strongly advised to refer to the guidance in the Teachers Notes' accompanying the Candidate Booklet for information about how much assistance can be given to candidates during the Investigation Time.

Choice of project

The emphasis should be on real, or at the very least, realistic projects. In general those candidates who did have a real client gained more marks, particularly in the areas of establishing needs, design and evaluation.

Items completed during Investigation Time

Item (a) – time plan

Most candidates produced some form of list of tasks to be undertaken, although a few simply listed the items given in the Candidate Booklet and so received no marks.

It is important that candidates produce a timetable in sufficient detail to be able to monitor their progress. They should break the task down into short, manageable sub-tasks. This is particularly so in the Controlled Conditions where time is limited. Merely saying that implementation will take 8 hours is not sufficient detail. Candidates should break the implementation down into sub-tasks such as setting up worksheets, entering data, formatting cells, recording macros and setting up menus.

The more detailed the time plan, the easier it is for candidates to monitor progress as required in item (j).

Candidates should be reminded that a second copy of this time plan should be printed out so that progress against the time plan can be monitored and recorded by hand as the Controlled Conditions progress.

Item (b) – background information

Candidates should ask the question, "Why does the client need a new spreadsheet system?" Most candidates produced a description of the background of the client, the intended user(s) of the new spreadsheet system and why a spreadsheet system was needed. Those who went on to explain the benefits to the client of using the spreadsheet system gained the second mark in the first row.

Most candidates identified the skill levels of the user(s). Those candidates who went on to describe how this would affect the designs of the new system gained the second mark in the second row.

Item (c) – client needs

Many candidates produced a list of some client needs, gaining one mark. Better candidates gave these needs in more detail and explained how this would affect their system. In particular candidates should describe exactly what information the client wants the new spreadsheet system to provide and go on to explain how the new system will provide this information.

Some candidates stated that the client needs were to include six complex spreadsheet facilities. Clearly these are not the requirements of the client but the requirements of the Specification. Statements that reiterated the set tasks did not gain any marks.

Candidates should describe inputs, processing and outputs. Few candidates described these in detail, if at all. It was rare to see any mention of the expected formats of input data or of outputs or to see samples of input data or of outputs. For example, if names are being stored in the spreadsheet system, is the name stored in one cell or are the title, forename and surname stored in different cells? If an amount of money is stored, which currency is to be used? Is it stored as a whole number or to 2 decimal places?

Describing the required outputs, and the inputs and processing required needed to obtain these outputs, is an important part of describing the needs of the client.

Candidates do not need to list the hardware required to produce or run the spreadsheet system.

Item (d) – evaluation criteria

Evaluation criteria should be the basis of planning the testing. They should enable the candidate to assess their spreadsheet systems' suitability for purpose and audience. Criteria should be both qualitative and quantitative. To gain full marks candidates should clearly explain how the criteria are related to the requirements of their client (as described in item c).

Many candidates failed to include both qualitative and quantitative criteria, ignoring apparently obvious criteria such as the information to be produced being accurate and the spreadsheet being legible to the user.

Some candidates simply gave as their criteria, 'Have my client's needs been met?' without saying what they had to do to meet those requirements and breaking this down into smaller parts. Statements such as this are too general to be awarded marks.

It is essential that the evaluation criteria produced by candidates are sufficient to allow them to make critical judgments of their spreadsheet system. It is not appropriate for candidates to use evaluation criteria as a checklist or 'to do' list.

Item (e) - designs

Most candidates produced designs for their spreadsheet systems. These were often of a high standard, well-annotated and sufficient for a third party to be able to implement. However few candidates related their designs to the needs of the client or had involved their client in the design process.

This is really the last opportunity to involve the client, before the start of the controlled conditions, and candidates should both say how their designs meet the client's needs and update the designs based on the comments of the client.

Some candidates submitted their designs in Microsoft Excel. Designs should be implementation-free and should not be created in the same software as used in the controlled conditions.

It is however acceptable and good practice to use printed blank sheets from the spreadsheet software as the basis for hand-drawn designs.

Item (f) – test plan

Candidates should produce a test strategy for this item. This describes what elements of the spreadsheet system are to be tested and how. It should include testing of individual parts of the system, as well as testing of the completed (integrated) system.

Sets of test data should be specified at this stage, including expected outputs for this data.

Test plans should test the functionality of the system and test any features described in the evaluation criteria produced for item (d).

Nearly all candidates produced some sort of test plan that tested some individual parts of the system, such as validation routines or macro buttons.

Candidates gained the best marks for creating a plan that tested individual parts of the system, tested all outputs form the spreadsheet system and tested the system as a whole.

Candidates should be reminded that this task forms part of the preparatory folder for this unit, and should be printed out or hand-written before the start of the Controlled Conditions. This document can then be updated by hand as testing is undertaken during the Controlled Conditions.

Controlled Conditions Items

Centres should remind candidates that they may only take printed or hand-written material in to Controlled Conditions, and that material should not be brought in after the start of the first session of Controlled Conditions. Implementation of the planned spreadsheet system must only be attempted under Controlled Conditions.

Centres are reminded that controlled conditions means examination conditions and that clear guidance is provided in the teachers' notes about what is and what is not allowed. Any queries should be addressed to the ICT subject support team.

Several centres seemed to be unclear about what is allowed to be taken into the controlled conditions sessions. No electronic files may be taken into these sessions.

Item (g) - testing

Few candidates gained good marks in this section. Most candidates produced evidence of testing some individual parts of the system in line with their test plan. To gain good marks, candidates should use appropriate data sets including normal, extreme and erroneous data to test all functions, comparing actual results with the expected results.

Few candidates produced evidence of carrying out integration testing.

Candidate should be encouraged to test the robustness of their spreadsheet systems, and test them in a way that aims to provoke failure, rather than focussing solely on success. Identifying errors, and where possible rectifying them, or suggesting ways in which they could be rectified in the future reflects well on candidates, and shows a much better understanding of the principles of this unit.

Centres should remind candidates that testing evidence is required in this item before they are asked to document the spreadsheet system that they have produced. The documentation produced for item (h) below should concentrate on how the finished system was created.

Item (h) - implementation

There were some good examples of use of spreadsheet software. Candidates generally used complex features but did not do enough to link their system to the needs of the client.

Common problems with documenting the development of the spreadsheet system included:

- Screenshots cropped so that cells mentioned in formulas were not visible so it was impossible to see whether the formulas referred to were correct.
- Screenshots cropped so that formulas in the formula bar were cut off.
- Screenshots cropped so that sheet names and file names were removed
- Poor colour choice so that screenshots were not legible
- Screenshots being too small to read

Many candidates printed worksheets in formula view, showing exactly what formulas they had set up. This is recommended. It is a good idea not only to adjust column widths to ensure that the whole of the formulas are visible but also to ensure that row and column headings are printed.

Generally there was a large amount of superfluous material in the submitted work. This included, for example, user documentation which was not required, hardware and software requirements and many pages on how to use the software to create the system.

Candidates do **not** need to document every step of how they have inserted some feature of the software such as recording a macro or formatting the borders of some cells. It is sufficient to show the completed features such as the coding of the macro or a screenshot of the cells with the borders formatted. These will indicate to the examiner that these features have been used.

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 new worksheet or by automatically deleting old data.

Candidates should be reminded that marks can only be given for evidence provided. Several candidates, for example, provided evidence of creating a macro without providing the coding of the macro as stated in the candidates' booklet. No marks can be awarded, in these instances, for this evidence.

Item (i) - evaluation

Nearly all candidates attempted to evaluate their spreadsheet system and gained one mark. Higher marks were gained by those candidates who incorporated some objectivity into their evaluation, by relating their comments to the test results, the original evaluation criteria and to the needs of their client, critically assessing whether they had been satisfied or not.

As the user will not be able to provide any feedback to candidates relating to the work produced during Controlled Conditions, referring to the evaluation criteria and the client's needs is essential at this stage. Candidates should also go on to identify areas for future improvement.

Item (j) – time monitoring

This item specifically requires candidates to update their original time plan to indicate how they actually used their time. To achieve two marks, candidates need to monitor their progress against the original plan and explain changes to their original schedule.

Statements such as "This took longer than I thought," without further explanation are not sufficient to achieve the marks available, but candidates should look at the reasons for any changes required, such as tests being unsuccessful and additional corrective work on the spreadsheet system being required.

Candidates should be encouraged to produce a single time plan that covers both Investigation Time and Controlled Conditions time and annotate it by hand. This method provides a much fuller account of the changes that a candidate makes to their time planning, and provides them with useful reference material for use when attempting item (k).

Item (k) – evaluation of their performance

Many candidates produced only superficial evaluations of their performance, and did not consider any strengths or weaknesses other than their use of the time available.

A large number of the evaluations seen indicated that candidates did not feel that they had prepared sufficiently for the Controlled Conditions – something that was often reflected in the marks awarded.

Written communication

This was generally pleasing. Candidates took a lot of effort to ensure that their work was well described using good technical language.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA website.