



General Certificate of Education

Information and Communication Technology 6521

Unit 6 Coursework: Use of Information Systems for Problem Solving

Report on the Examination

2007 examination – June series

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Set and published by the Assessment and Qualifications Alliance.

General comments

The majority of centres appreciate that dynamic data processing is expected for ICT 6 as opposed to the task driven approach of ICT 3. Centres usually exploit Microsoft Office using Access and candidates often generate well-documented solutions that exhibit sound implementation skills.

Many candidates have clearly taken on board the advice that solutions need to be reusable and that they need to demonstrate that their solutions can be operated over time. Genuine interaction between the candidate and the end-user is an essential requirement for this unit and it has a critical effect on the standard of the work produced. Candidates would benefit by ensuring that this interaction continues beyond the analysis phase.

Analysis

Primarily the analysis section is there to ensure that the candidate fully understands how the existing system operates and so can devise a set of implementation-free requirements that represent a viable solution to the problem posed. All too often an inadequate understanding of the problem leads to a simplistic or inappropriate solution.

At this level candidates should be making appropriate and sensible use of systems analysis tools and techniques. As many centres select a database style solution, it is critical that some form of data analysis is attempted. Systems analysis is a very well documented discipline and there is significant support for candidates and supervisors in explaining and using a comprehensive range of tools including data flow diagrams. High marks cannot be allocated for isolated use of techniques e.g. including a transcript of an interview without further essential descriptive work. A common issue in the analysis is the award of high marks where the information flows and data dynamics have not been fully identified.

Candidates should also ensure that the 'headings' of their report are not only simplistically covered and that comments made show an *understanding* of the problem posed e.g. describing a user's skills in the context of the problem, rather than mechanistically.

Design

Candidates should be reminded that to achieve high marks for Design a competent third party should be able to implement from the design work presented, without having to ask further questions and that an effective and full testing plan must be present in this section of the documentation.

It is pleasing to see good design work where a modular approach has been taken and where the focus is on the functional aspects of the solution. This approach allows the candidate to show how on implementation, objects combine together to produce solutions to problems.

A continued issue is where teachers allocate high marks for reports that omit the critical designs needed for implementation e.g. query/process designs.

As ever, it is the intention that a test strategy and plan(s) are produced before the implementation. The candidate must have a clear idea of the desired result, the criteria for success and the nature and scope of the data with which to test. This is likely to promote actions that will lead to a more effective solution later. The focus for testing must be on whether the solution developed can achieve the main functions required of the system. At times candidates focussed on trivial aspects, often repeating themselves, at the expense of the main

testing issues. Some candidates also focussed on testing features of the software package as opposed to their own solution.

It is important that candidates should also address at this stage how the user will be involved in the testing phase. Formal planning for this stage in the testing process can only help the candidate in their attempt to achieve the requirements of the testing phase itself.

Implementation

High marks can and have been awarded for solutions that are full and effective and solve problems which are open ended and dynamic. When database management software is used, it is expected that the full and effective use of the appropriate software functions, which manipulate the data in the system not just simple use of the storage and visual presentation aspects, will be used and that these will manipulate data in a fully normalised set of tables.

Candidates are expected to include adequate technical documentation within their report. As a full and detailed design is expected the candidate does not need to 'tell the story' of how the solution was built.

Testing

Candidates' attempts at functional testing are often sound, but greater use of data sets is expected, especially when candidates attempt to test processes implemented by the use of select queries or action queries which work on tables or sub-sets of data from those tables.

The GCE ICT specification states that end-user involvement must be, "clearly evidenced and reflect full participation," to attain the highest mark boundary. Too often high marks are still being allocated based upon a simple item of correspondence stating that the end-user has seen the system. It is expected that end-user acceptance testing will be planned for, carried out and fully documented.

User Guide

Candidates continue to produce good quality user guides that are more than often accurately assessed by centres. ICT 6 systems, however, deal with problems where there is dynamic change to data and it is expected that user guides should deal with this by including issues such as archiving as necessary.

Evaluation

While any information system will have general criteria that can be applied (for example, how robust is the solution) the candidate must make these criteria specific to the problem in hand. Candidates should have identified in their Analysis suitable performance indicators - both qualitative and quantitative - against which to assess their solutions performance and refer to evidence within their report as part of their discussion. For example, if a candidate had set an objective relating to accuracy of processed data, then it is necessary to state what degree of accuracy is required. In discussion of whether this has been met the candidate should offer reference to proof, which should be available within the testing section of the report. The end-user acceptance testing can be a rich source for supporting evidence for the candidate's evaluation work.

Report

The report should be clearly delineated, have a table of contents and be paginated. It is pleasing to see these aspects included and that the presentation standards demonstrated by candidates continue to improve.

Conclusions

Centres are reminded that in this unit at the grade E boundary candidates have always been expected to show that they have basic skills in the appropriate analytical methods, and that these skills are applied to solving a stated problem for a real or realistic end-user. They have also needed to show that they can utilise applications software to solve open-ended problems and have the skills necessary to test their solutions. Candidates are expected to complete basic documentation for all sections. They must show that they can apply the basic skills and do so in the context of problem solving, and not simply as stand-alone components e.g. not just drawing a data flow diagram, but proving that they can draw a data flow diagram which represents the problem stated.

In light of the observations made above, the judgemental grade boundary of Grade E for ICT 6 has been revised. The resultant new boundaries are given below.

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	90	59	51	43	36	29
Uniform Boundary Mark	120	96	84	72	60	48

Mark Ranges and Award of Grades

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