



**General Certificate of Education (A-level) Applied
June 2012**

**Applied Information and
Communication Technology**

IT09

**(Specification
8751/8753/8756/8757/8759)**

Unit 9: Software Development

Report on the Examination

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IT09 – Software Development

The format of the examination is an AQA-set assignment, for which 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 software system and an evaluation of the product and their own performance.

The Task

The task given for this examination series was:

“The committee of a local community wants to record and monitor entries to its annual show.

The committee wants you to create a software system that will allow it to add, amend and delete competitor and class entry records and to search for, amend and print out class lists and competitor details. It must also allow the committee to perform statistical analysis of the entries.”

Items (a) to (g) of the task are produced during the Investigation Time, whilst items (h) to (m) are produced during the Controlled Conditions.

Items (a) to (f) produced during Investigation Time

Many candidates misinterpreted the task and described clients who wanted to record competitors in competitions that had heats, knockout rounds and finals to produce a winner.

Where the candidate described a situation where various categories of competitor were available and where competitors could enter more than one class then these were in line with the task set.

Item (a)

Those candidates who provided a task based time plan, listed in a logical order, and time estimates for each task were awarded two marks.

Item (b)

Many candidates did not describe why the software system in the task was required, but instead described what the ‘old system’ did or what the ‘new system’ would do. Candidates who provided a reasonable description of why the system was needed were awarded two marks.

Candidates who described a situation that did not fit the task set were not able to gain any marks.

Item (c)

Most candidates were awarded one mark for identifying an intended user or users and their relevant IT skills, or lack of them. Better candidates were able to clearly link the skills and

experience of the users to features of the proposed system's user interface and were awarded two marks.

Item (d)

Many candidates neglected to reflect the client's stated needs, or to interpret them in the light of the task set. These candidates were not able to achieve all the marks available.

Many candidates stated what inputs and outputs were required to achieve the task set. Few, though, gave detailed specifications of either. Inputs described often included clicking buttons but neglected data inputs to data storage structures. Descriptions of outputs were less well described than inputs and it was rare that on-screen reports or printed reports were described in detail – often just the general name of the output was given.

Some excellent attempts at describing processing through the use of pseudocode, or structured English, were seen, with sufficient description being provided to achieve maximum marks.

Where the candidate had misinterpreted the task set marks were awarded where elements of the proposed system did meet parts of the task set.

Item (e)

Several candidates confused the evaluation criteria with the description of the client needs (item (d)) and they were therefore unable to gain maximum marks overall on the two items. In particular, some candidates exactly repeated the client needs and called them evaluation criteria. This is not what is required, as the evaluation criteria are intended to be questions or measures used to assess whether the client needs have been met.

Most candidates produced evaluation criteria that included qualitative and quantitative measures. Many candidates incorrectly identified the types of evaluation criteria, often identifying qualitative criteria as quantitative and vice versa.

Item (f)

Few candidates specified the folder structure to be used, though many did provide screenshots to show how their files were stored. In addition, some candidates showed that they understood why this was necessary and why it was important to save versions of their software system as it was being developed.

Most candidates made a good attempt at producing designs for the interface of their system, showing the key features. Few explained how the design choices made related to the user needs, though better candidates did clearly note how the features would meet the user needs listed.

Few candidates showed how modular programming techniques would be used.

Most candidates provided some kind of data dictionary that defined the data structures necessary for their system. The majority of these were only sufficiently detailed to be awarded one mark. Better candidates described typical items of data, validation rules and temporary storage variables and arrays that would be necessary to allow a third party to implement the system.

Item (g)

Some candidates demonstrated that they understood the different types of tests necessary to test their software system effectively and explained how they would apply them. These candidates were awarded two marks for their test strategies. Many others appeared confused by what constitutes a test strategy, particularly with regard to testing the whole of the system. Some had repeated all the types of testing that they had found on the Internet whether or not these were applicable.

Few test plans included data that effectively tested the whole of the system. Many candidates neglected to specify all three types of data: normal data (that is acceptable), extreme data (that will test the boundaries of what is acceptable); erroneous data (that is totally unacceptable).

Some candidates who had included whole system testing in their test strategy had not included tests that would test the whole system in their test plans. Often the tests for inputting data, amending data, deleting data and checking the statistics produced used different pieces of data so it was not clear if the whole system was working or not.

Items (h) to (m) produced during Controlled Conditions

Candidates may only take printed or hand-written material in to Controlled Conditions, and additional material may not be brought in after the start of the first session of Controlled Conditions. Implementation of the planned software system must only be attempted under Controlled Conditions.

The majority of candidates in this examination series used Microsoft Access and Visual Basic to produce their software system. Most candidates provided evidence of using programming techniques to produce their system, with some extremely good examples being seen.

Item (h)

Most candidates provided some evidence of following their test plans but few noted what changes were needed to the solution. Those who did were awarded three marks.

Item (i)

Some candidates had appropriately used candidate defined program control structures but few had talked about how or why they were being used, which is necessary to achieve the third mark. On the whole the program control structures used by candidates were restricted to simple, or nested, if statements, though the scope of the system required would have allowed other selection and repetition structures to be used.

Few candidates had used appropriate candidate defined variable, object and procedure names, and of those even fewer had actually indicated this through annotation or commented code.

Where candidates had used program variables, or specified data types, few had explained their choices.

Most candidates provided some annotated evidence of the key features of their software system and in a few cases this was good enough for three marks to be awarded.

Item (j)

Some candidates had produced instructions for installing the software system on the client's machine and instructions for accessing the key features of the software system. This was sufficient for two marks to be awarded

Some candidates provided step-by-step instructions on how to create the system, which could not be awarded any marks.

Item (k)

In this item the candidate's evaluation of their software system and the quality of written communication is assessed.

Stronger candidates used well written text to analyse the success of their software systems by comparing the results of testing with the evaluation criteria and the client needs. They used an appropriate form of presentation, often text combined with tabular information. They also used appropriate vocabulary to explain some of the complex ideas in their analysis. On the whole their work in this section was well structured and coherent. It was interesting to note that some of the highest marks went to work which was very concise.

Weaker candidates tended to neglect the results of testing and often used poorly written English that was not in an appropriate format.

Item (l)

Candidates who had achieved full marks for item (a) often achieved full marks for this item. Weaker candidates tended not to explain alterations to their schedule in enough detail to achieve two marks.

Item (m)

Many candidates discussed their own performance in enough detail to achieve two marks, often discussing lessons learned and possible alternative approaches. Most candidates did achieve at least one mark.

Mark Ranges and Award of Grades

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