



**General Certificate of Education (A-level) Applied  
June 2011**

**Applied Information and  
Communication Technology**

**IT09**

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

**Unit 9: Software Development**

**Final**

***Mark Scheme***

---

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available from: [aqa.org.uk](http://aqa.org.uk)

Copyright © 2011 AQA and its licensors. All rights reserved.

**Copyright**

AQA retains the copyright on all its publications. However, registered centres for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to centres to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

GCE Applied ICT (8759)  
*Unit 9: Software Development (IT09)*

Centre name: .....

Centre no:

--	--	--	--	--

Candidate name: .....

Candidate no:

--	--	--	--

For each item a mark of zero will be recorded for all non-creditworthy responses.

	1 mark	2 marks	3 marks	Marks
Item (a) 2 marks	Candidate has produced a time plan that identifies the tasks required.	Candidate has produced a comprehensive list of tasks that includes an indication of time allocated to each task.		
Item (b) 2 mark	Candidate has attempted to describe the background information about the client and why the software system in the task is required.	Candidate has clearly described the background information about the client and why the software system in the task is required.		
Item (c) 2 mark	Candidate has identified the intended user(s) of the system, and their skill levels.	Candidate has described the intended user(s) of the system, and explained how the skill levels of the user will affect their designs.		
Item (d) 9 marks	Candidate has listed some client needs for the task set.	Candidate has produced a comprehensive list of client needs for the task set.	Candidate has produced a comprehensive list of client needs for the task set and explained how their proposed system will meet these needs.	
	Candidate has stated the inputs and outputs required to achieve the task set.	Candidate has specified the inputs and outputs required to achieve the task set.	Candidate has specified in detail the inputs and outputs required to achieve the task set.	
	Candidate has produced a description of some of the processing to be undertaken in the proposed software system.	Candidate has produced a clear description of most of the processing to be undertaken in the proposed software system.	Candidate has produced clear descriptions of the processing to be undertaken in the proposed software system, and explained how these will meet the client needs.	

	1 mark	2 marks	3 marks	4 marks	Marks
Item (e) 4 marks	Candidate has produced some evaluation criteria for their solution.	Candidate has produced both qualitative and quantitative evaluation criteria for the solution.	Candidate has produced both qualitative and quantitative evaluation criteria that are appropriate to assess if the client needs have been met.	Candidate has identified both qualitative and quantitative evaluation criteria, and has stated why they are appropriate to assess if the client needs have been met.	

	1 mark	2 marks	3 marks	Marks
Item (f) 7 marks	Candidate has produced annotated designs of the user interface to be implemented, showing the key features.	Candidate has produced annotated designs of the user interface to be implemented, explaining the key features, and has related any design choices to the requirements of the user.		
	Candidate has produced designs showing the use of modular programming techniques.	Candidate produced designs for a modular software system, and has explained how the modular design meets client needs.		
	Candidate has produced outline designs of some of the data structures required to create the proposed software system.	Candidate has produced detailed designs of most of the data structures required to create the proposed software system.	Candidate has produced detailed designs of the data structures required to produce the proposed software system, sufficient for a third party to implement the system.	
Item (g) 4 marks	Candidate has produced a testing strategy that tests individual modules of the software system.	Candidate has produced a testing strategy that tests individual modules and the completed system.		
	Candidate has produced an outline for a testing plan(s).	Candidate has produced a testing plan(s) that includes testing with normal, extreme and erroneous test data.		

	1 mark	2 marks	3 marks	Marks
Item (h) 8 marks	Candidate has provided some evidence of carrying out modular testing.	Candidate has provided evidence of carrying out modular testing in line with their planned testing and has compared results with the expected outcomes.	Candidate has provided evidence of carrying out modular testing in line with their planned testing and has compared results with the expected outcomes, noting changes that may need to be made to the system as a result of the testing.	
	Candidate has provided some evidence of carrying out system testing.	Candidate has provided evidence of carrying out system testing in line with their test strategy and has compared results with the expected outcomes.		
	Candidate has produced a software system that partially performs the functions specified in the task.	Candidate has produced a software system that performs the functions specified in the task.	Candidate has produced a software system that performs the functions specified in the task, and clearly attempts to meet the client's needs as described in (d).	
Item (i) 13 marks	Candidate has implemented their designed system using candidate-defined program control structures.	Candidate has implemented their designed system using appropriate candidate-defined program control structures.	Candidate has implemented their designed system using appropriate candidate-defined program control structures, and indicated their use.	
	Candidate has used some appropriate candidate-defined variable, object, and procedure names.	Candidate has used appropriate candidate-defined variable, object, and procedure names.		
	Candidate has used program modules in the software system produced.	Candidate has created their own program modules for the software system produced.		
	Candidate has identified where they have used some appropriate data types in their system.	Candidate has identified where they have used appropriate data types throughout their system.	Candidate has identified where they have used appropriate data types throughout their system, and has explained their choices.	
	Candidate has partially annotated their program code.	Candidate has appropriately annotated their program code to explain some key features.	Candidate has appropriately annotated their program code to explain key features, sufficient for a competent third party to adapt or maintain it.	

	1 mark	2 marks	3 marks	Marks
Item (i) 2 marks	Candidate has shown some awareness of the need to manage files during the development of their software system, by specifying and using appropriate file and folder names.	Candidate demonstrates that they have consistently managed work effectively such as specifying and using appropriate file and folder names, and backups or version numbering.		
Item (j) 2 marks	Candidate has produced basic user instructions.	Candidate has produced user documentation that is appropriate for the user identified in their specification.		

Item (k) 11 marks	<p><b>Low mark range 0–3</b> Candidate has attempted to evaluate their software system. Text is readable. There may be some errors of spelling, punctuation and grammar. The reader can understand what is written but the meaning is not always clear. Candidate has used a form and style of writing and presentation is sometimes appropriate to its purpose, but with deficiencies. Candidate has expressed straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Information presented may lack structure.</p>	
	<p><b>Mid-mark range 4–7 marks</b> Candidate has evaluated their software system using the evaluation criteria and/or the needs of the client, making reference to results of testing. Text is readable. There may be occasional errors of spelling, punctuation and grammar. Most of the meaning is clear for a reader. Candidate has, in the main, used a form and style of writing and presentation which is appropriate for its purpose. Candidate has expressed moderately complex ideas clearly and reasonably fluently. Candidate has used well linked sentences and paragraphs so that information is generally well structured. There is some evidence of appropriate use of technical terminology.</p>	
	<p><b>High mark range 8–11 marks</b> Candidate has critically evaluated their software system using the results of testing, their evaluation criteria, the skills of the user and the needs of the client. Text is readable. There are few, if any, errors of spelling, punctuation and grammar. Meaning is clear for a reader. Candidate has selected and used a form and style of writing and presentation appropriate to purpose and has expressed complex ideas clearly and fluently. Information is well structured with sentences and paragraphs following on from one another clearly and coherently. Specialist vocabulary has been used appropriately, including appropriate technical terms that relate to ICT.</p>	

	1 mark	2 marks	3 marks	Marks
Item (l) 2 marks	Candidate has shown that they monitored their progress against their implementation schedule.	Candidate has shown that they monitored progress explaining any alterations to their implementation schedule.		
Item (m) 2 marks	Candidate has evaluated their own performance in producing their system.	Candidate has evaluated their own performance in producing their system identifying strengths and weaknesses and areas for improvement.		

**The following standard abbreviations may be used:**

NA Not Appropriate – the information presented is not appropriate to the requirements of the task

BOD Benefit Of the Doubt

NBOD No benefit of the doubt