AQA

General Certificate of Education

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

IT09   Software Development

Mark Scheme

2007 examination - January series

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 meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting 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 the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting 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.

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Unit 9: Software Development (IT09)

	1 mark	2 marks	3 marks	Marks
Item (a) 2 marks	Candidate has produced a time plan that identifies the tasks required in an appropriate order.	Candidate has produced a comprehensive list of tasks in an appropriate order.		
Item (b) 4 marks	Candidate has attempted to describe the background of the client and why a software system is required.	Candidate has clearly described the background of the client and why a software system is required.		
	Candidate has identified the intended user(s) of the system, and their skill level.	Candidate has identified the intended user(s) of the system, and produced notes indicating how the skill level of the user will affect their designs.		
Item (c) 9 marks	Candidate has listed some client needs.	Candidate has produced a comprehensive list of client needs.	Candidate has produced a comprehensive list of client needs and explained how their proposed system will meet these needs.	
	Candidate has stated the inputs and outputs required by the client.	Candidate has specified the inputs and outputs required by the client.	Candidate has specified in detail the inputs and outputs required by the client.	
	Candidate has produced a clear description of some of the processing to be undertaken in the proposed software system suitable for discussion with the client.	Candidate has produced a clear description of most of the processing to be undertaken in the proposed software system suitable for discussion with the client.	Candidate has produced clear descriptions of the processing to be undertaken in the proposed software system, and agreed these with the client.	

	1 mark	2 marks	3 marks	4 marks	Marks
Item (d) 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 (e) 9 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.		
	Candidate has produced annotated designs of the user interface to be implemented, explaining 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 justified how the structure of their 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.	

	1 mark	2 marks	3 marks	Marks
Item (f) 4 marks	Candidate has produced an outline for a testing strategy.	Candidate has produced a testing strategy that includes testing with normal, extreme and erroneous test data.		
	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 in a logical order.		

	1 mark	2 marks	3 marks	Marks
Item (g) 11 marks	Candidate has provided some evidence of carrying out testing of processes.	Candidate has provided evidence of carrying out testing of processes in line with their planned testing and has compared results with the expected outcomes.	Candidate has provided evidence of carrying out testing of processes 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 integration testing to test the whole system.	Candidate has provided evidence of carrying out integration testing to test the whole system 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 which 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 (c).	
	Candidate has produced some evidence of carrying out testing against the evaluation criteria defined in (d).	Candidate has produced good evidence of carrying out testing against the evaluation criteria defined in (d).	Candidate has produced good evidence of carrying out testing against the evaluation criteria defined in (d) and has drawn meaningful conclusions from the results of their tests.	

	1 mark	2 marks	3 marks	Marks
	Candidate has implemented their designed system using at least two different program control structures.	Candidate has implemented their designed system using at least two different appropriate program control structures.	Candidate has implemented their designed system using at least two or more different appropriate program control structures, and explained their choice.	
	Candidate has used some appropriate user-defined variable, object, and procedure names in some of their system.	Candidate has used appropriate user-defined variable, object, and procedure names throughout their system.		
Item (h) 13 marks	Candidate has identified some of the modular programming techniques used in the software system produced.	Candidate has identified the modular programming techniques used in 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 justified their choices.	
	Candidate has produced some annotated evidence of the key features in their software system.	Candidate has produced good annotated evidence of the key features in their software system.	Candidate has produced good annotated evidence of the key features in their software system, sufficient for a competent third party to adapt or maintain it.	

	1 mark	2 marks	3 marks	Marks
Item (i) 2 marks	Candidate has produced user instructions that describe how to install and access their software system.	Candidate has produced user documentation that describes how to install and access their software system, and use its main features. This is suitable for the user identified in their specification.		

	1 mark	2 marks	3 marks	4 marks	Marks
Item (j) 4 marks	Candidate has attempted to evaluate their software system.	Candidate has evaluated their software system using the evaluation criteria.	Candidate has evaluated their software system using the evaluation criteria, relating their comments to the needs of their client.	Candidate has evaluated their software system using the evaluation criteria, relating their comments to the needs of their client, and identified areas of their system that could be improved in the future.	

	1 mark	2 marks	3 marks	Marks
Item (k) 2 marks	Candidate has shown that they adhered to their implementation schedule.	Candidate has shown that they monitored progress explaining any alterations to their implementation schedule.		
Item (l) 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.		

	1 mark	2 marks	3 marks	4 marks	Marks
Quality of Written Communication 4 marks	Candidate uses written expression in a non-specialist way.	Candidate uses written expression with some specialist vocabulary to organise information.	Candidate uses written expression with suitable specialist vocabulary to organise and interpret information.	Candidate uses written expression with appropriate specialist vocabulary to organise and interpret information within complex subject matter.	

Page	Maximum mark	Mark awarded
1	15	
2	13	
3	4	
4	11	
5	13	
6	10	
7	4	
Total	70	