



General Certificate of Education (A-level)
January 2013

ICT

INFO3

(Specification 2520)

Unit 3: The Use of ICT in the Digital World

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 students' 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 students' 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 students' 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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GENERAL GUIDANCE NOTES FOR EXAMINERS

Overall guidelines

1. All examples accepted should be clearly related to the subject area and should not be “generalised” examples.
2. Attention should be paid to ensure that marks are not awarded for simple restating of the question or the stem, often involving the exact same terms.
3. It should be remembered that scripts could be seen after they are marked and so consistency of approach and correct mechanics of marking are essential.
4. Rules on positioning of ticks and marks are to aid in checking and remarking of scripts.
5. Do not expect the candidate to use the exact wording given in the mark scheme. If you are in doubt as to the correctness of an answer given by the candidate, consult your Team Leader.
6. The answers given in the mark scheme are exemplars. Credit must be given for other correct answers not given in the mark scheme. Please refer to Team Leaders where there is any doubt.
7. One-word answers, where acceptable, will be indicated on the question paper.
8. The meaning of ICT-specific words and phrases are generally as defined by *BCS Glossary of Computing and ICT* (current edition).

Specific marking guidelines

9. The basic rule is one mark one tick. The tick to be positioned at the point where the mark is gained in the answer and definitely not in the margin.
10. The only figures in the margin should be sub-totals for parts of questions and a final total for the whole question in the box provided.
11. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.
12. Where candidates have added extra to their answers on additional pages, the total mark should be indicated as ‘including x marks from supplementary page y’. The total mark should be written in the appropriate printed box on the question paper.

13. The use of the following symbols/marks is acceptable:
- a. BOD – where the benefit of the doubt is given for the point the candidate is making. This is generally where poor writing or English is an issue. Its widespread use should be avoided.
 - b. An omission sign ^ should be used where the candidate has given insufficient information to gain a mark. This is particularly useful when a teacher or student looks at scripts against a mark scheme.
 - c. It may be appropriate to indicate where the same point has been covered more than once by an arrow or *where a point has been covered in several lines of prose by the use of brackets*.
 - d. For questions where candidates' answers are assessed for QWC, no individual ticks should be written on the script as it should be marked holistically.

14. Markers are responsible for checking:
- a. The transposition of marks to the front cover
 - b. That all work has been marked on each script
 - c. That all marks for individual questions are totalled correctly
 - d. That the script total is transferred to the box at the top right of the script.
 - e. That they **clearly** initial the script, under the total at the top right, so it is possible for the Principal Examiner to identify each markers work.

SECTION A

1	<p>Louisa Tait mentioned that Aggregate had followed only the design and construction stages of the established system development life cycle.</p> <p>Complete the diagram below by inserting the omitted stages of the system development life cycle in the correct order.</p>	(4 marks)
	<p>Purpose of the Question</p> <p>Knowledge of the system development life cycle stages.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>Two stages of the SDLC have been provided (design and construction). Do not give credit for these stages.</p> <p>Give one mark each (maximum 4) for other valid stages entered in the correct order.</p> <p>No marks for “implementation” as this is construction as defined in the Specification.</p>	
	<p>Example answer</p> <p>1 – Analysis (1) 2 – Design (shown in question – do not give credit) 3 – Construction (shown in question – do not give credit) 4 – Testing (1) 5 – Installation and conversion (1) 6 – Review and maintenance (1)</p>	

2a	<p>Louisa Tait mentioned how Aggregate had breached two principles of the Data Protection Act and described how future breaches could be prevented.</p> <p>Describe, with examples relevant to Aggregate, other principles of the Data Protection Act with which Aggregate must comply.</p>	(12 marks)
	<p>Purpose of the Question</p> <p>Application of knowledge and understanding of legislation, namely the DPA.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A depth or breadth question. Excluding the two principles mentioned, there are six others.</p> <p>One mark for each principle listed and a further mark for each descriptive point/example/extension to a maximum of 6 marks per principle. Do not give marks for principles 3 and 4. See also the following link:</p> <p>http://www.legislation.gov.uk/ukpga/1998/29/schedule/1</p>	
	<p>Example answer</p> <p>Because Aggregate is a bank, it is likely it will have to share data with organisations outside the UK. (1) The DPA states that data cannot be transferred outside the EU or to countries without suitable data protection laws. (1) Aggregate should therefore be selective with whom it shares data. (1)</p> <p>Another data protection principle is that data must be held no longer than is necessary. (1) Aggregate should therefore have automatic purging procedures (1) in place to delete customer records at a suitable time after accounts have been closed. (1)</p> <p>Data must be surrounded by appropriate security (1). Aggregate will need to have appropriate access controls in place (1) plus physical security (1) in the form of locked doors (1) and security guards. (1) Disaster contingency plans (1) should also form part of Aggregate's overall security.</p>	

2b	<p>Aggregate's customer-facing staff need to understand the principles of the Data Protection Act.</p> <p>Describe the training options available and recommend and justify the most appropriate training programme for Aggregate's staff.</p>	<i>(15 marks)</i>
	<p>Purpose of the Question</p> <p>Knowledge and understanding of training methods.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>Low mark range (0-5) Candidate identifies training methods in general. Little or no reference made to the need to train large numbers of staff.</p> <p>Medium mark range (6-10) Candidate describes training methods some of which may be suitable for training large numbers of staff and may make a recommendation.</p> <p>High mark range (11-15) Candidate provides detailed description of suitable training methods and recommends and justifies the most appropriate for Aggregate.</p>	

3	Discuss how Aggregate could have made use of ICT policies and procedures to avoid the casual working atmosphere described.	<i>(10 marks)</i>
	<p>Purpose of the Question</p> <p>Application of knowledge and understanding of policies and procedures to a defined situation.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>One mark per valid point.</p>	
	<p>Example answer</p> <p>One policy that could be considered is an Internet Acceptable Use policy. (1) This would set the boundaries of internet use by staff (1) and acceptance of this could form part of the contract of employment (1), with breaches detected by monitoring software (1) and with compliance enforced using appropriate disciplinary procedures. (1)</p> <p>An appropriate Testing and Software Release procedure (1) would have prevented test data being used for operational mailshots. (1) This could ensure that test and operational environments are kept separate (1) with user sign-off (1) prior to the mailshot being passed to the live environment. (1)</p>	

4	<p>Aggregate would in future include “legislation” as a factor to consider when devising an ICT strategy.</p> <p>Describe other factors that should influence an ICT strategy.</p>	(5 marks)
	<p>Purpose of the Question</p> <p>Knowledge of factors that affect ICT strategy.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A depth or breadth question. One mark for identifying a factor and up to two marks for explanatory points. Maximum two marks if factors identified without descriptions.</p>	
	<p>Example answer</p> <p>Legacy systems (1) should be considered, as any strategy may be constrained by old systems that may be difficult or costly to convert. (1)</p> <p>Other factors are available finance for the strategy (1) and Aggregate’s business goals. (1) The ICT strategy should aim to meet these goals without exceeding the budgets provided by Aggregate. (1)</p>	

5	<p>ICT systems are used to manage internal ICT resources. For example, an Asset Register system can be used to record the number and types of software licences used by an organisation.</p> <p>Discuss how ICT systems can assist with the management of the following two internal resources:</p> <ul style="list-style-type: none"> • People • ICT consumables 	(10 marks)
	<p>Purpose of the Question</p> <p>Knowledge and understanding of managing internal ICT resources.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A depth/breadth question. One mark per valid point.</p> <p>Note that the question is about internal resources and not about customers.</p> <p>The maximum mark for one internal resource type is 7 marks.</p>	
	<p>Example answer</p> <p>People. Human Resources systems (1) can be used to record personal details of all staff (1), including start date (1), qualifications and training (1) and past employments and experience. (1) Some HR systems are also combined with payroll packages. (1)</p> <p>ICT Consumables. Stock control systems (1) can be used to manage ICT consumables. Knowledge of current stock holdings (1) and re-order levels (1) are necessary for efficient management of consumables, such as paper and toner cartridges. (1)</p>	

<p>6</p>	<p>ICT systems can vary in size from those used by small, one-person businesses to those used by large, multi-national organisations.</p> <p>Discuss how the size of an organisation may affect the backup and recovery procedures that it uses.</p>	<p>(15 marks)</p>
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of the effect of size/scale of an organisation in relation to backup and recovery.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>Low mark range (0-5) Candidate confines answer to a basic description of backup and/or recovery.</p> <p>Medium mark range (6-10) Candidate describes some issues for backup and recovery and demonstrates some understanding of the impact due to the size of the organisation.</p> <p>High mark range (11-15) Candidate discusses relevant issues and shows a good understanding of the impact of the size of an organisation on its backup and recovery operations.</p>	

7	<p>Explain, using examples, what the following types of systems could be used for:</p> <ul style="list-style-type: none"> • Customer Relationship Management • Document management systems • Systems for collaborative working. 	(9 marks)
	<p>Purpose of the Question</p> <p>To test knowledge and understanding of certain types of ICT systems and their uses.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A depth or breadth question but all three system types must be referred to for maximum marks. For each system, one mark for a basic explanation, one mark for an example and up to three marks for valid extension points.</p>	
	<p>Example answer</p> <p>Customer Relationship Management. Used to maintain key information about customers (1) and for analysing customer expenditure patterns and habits. (1) Often used as the basis of loyalty card systems. (1)</p> <p>Document management systems. Used to store paper based documents electronically. (1) Documents are scanned and stored (1) and can be accessed by use of keywords. (1)</p> <p>Systems for collaborative working. These enable teams to work on one project or activity at the same time. (1) Collaborative systems allow parts of the project to be “locked” while individual team members work on that part. (1) An example could be where developers are working on systems documentation: while one developer is updating a document, others can read it, but not update it. (1)</p>	

8	<p>“The continued growth of social media is having a huge impact on the way organisations interact with individuals, such as their employees and customers, and with society in general.”</p> <p>Discuss this statement.</p>	(20 marks)
	<p>Purpose of the Question</p> <p>Tests knowledge and understanding of emerging use of technology.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>See next page.</p>	

	<p>Example answer</p> <p>Low mark range</p> <p>Candidate identifies the impact of social media but confines this to only one or two of the three groups mentioned (employees, customers, society). Candidate typically uses a form and style of writing that is barely appropriate for its purpose and does not provide an opinion on the statement. Candidate has expressed simple ideas clearly but may be imprecise and awkward in dealing with complex or subtle concepts implied by the question. Information or arguments may be of doubtful relevance or be obscurely presented. Errors in spelling, punctuation and grammar may be noticeable and intrusive to understanding, suggesting weaknesses in these areas. Text is barely legible.</p> <p style="text-align: right;">0-5</p> <p>Medium mark range</p> <p>Candidate describes the impact of social media but confines this to only two or three of the three groups mentioned (employees, customers, society). Candidate uses a form and style of writing which is sometimes appropriate for its purpose but with many deficiencies. Any opinion given on the statement is weak or lacks justification. Candidate has expressed straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Information or arguments may sometimes stray from the point or may be weakly presented. There may be some errors of spelling, punctuation and grammar but not such as to cause problems in the reader's understanding and not such as to suggest a weakness in these areas. Text is legible.</p> <p style="text-align: right;">6-10</p> <p>Good mark range</p> <p>Candidate explains the impact of social media for two or three of the groups mentioned (employees, customers, society), provides an opinion on the statement and the meanings and arguments are clear. Discussion is limited and there is a limited range of arguments. Candidate has in the main used a form and style of writing appropriate for its purpose, with only occasional lapses. Candidate has expressed moderately complex ideas clearly and reasonably fluently. Candidate has used well-linked sentences and paragraphs. Information or arguments are generally relevant and well structured. There may be occasional errors of spelling, punctuation and grammar. Text is legible.</p> <p style="text-align: right;">11-15</p> <p>High mark range</p> <p>Candidate has discussed the impact on all three groups and provides a closely argued and concise opinion on the statement. Meaning is clear. Candidate has selected and used a form and style of writing appropriate to purpose and has expressed complex ideas clearly and fluently. Sentences and paragraphs follow on from one another clearly and coherently.</p> <p>Specialist vocabulary has been used appropriately. There are few, if any, errors of spelling, punctuation and grammar. Text is legible.</p> <p style="text-align: right;">16-20</p>	
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