



General Certificate of Education (A-level)
JUNE 2013

ICT

INFO3

(Specification 2520)

Unit 3: The Use of ICT in the Digital World

Final

Mark Scheme

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SECTION A

1	<p>Alisha Khan, Redfield's CIO, stated that emerging ICT technology was an important factor to consider when developing an ICT strategy.</p> <p>Describe possible disadvantages to an organisation that uses emerging ICT technology as the driving factor in developing an ICT strategy.</p>	<i>(4 marks)</i>
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of ICT strategy, including the implications of the technology lifecycle on it.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>One mark for each identified disadvantage, further marks for extensions, maximum three marks for any one disadvantage.</p> <p>One mark only for mentioning other strategic factors that should also be considered.</p>	
	<p>Example answer</p> <p>Emerging technology may not be reliable (1), as early use may not have uncovered errors. (1)</p> <p>There is a risk that the technology may be withdrawn due to errors and poor sales. (1) This means that Redfield may be left with an unsupported ICT product. (1)</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.4 The influence of technical considerations on the use of ICT.</p>	
	<p>Notes for examiners</p> <p>A depth or breadth question. Must be at least two disadvantages for maximum marks.</p>	

2	Describe the security measures that should be considered by Redfield Football Club to maintain the privacy and security of its customer data.	(12 marks)
	<p>Purpose of the Question</p> <p>To assess application of knowledge and understanding of the various security measures and their appropriateness for Redfield.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>One mark per security feature plus extension marks. Extension marks must describe how the measure maintains privacy/security. A list of measures will gain one mark only.</p>	
	<p>Example answer</p> <p>A security policy should be established (1) to reflect the principles of the Data Protection Act/Computer Misuse Act (1).</p> <p>Encryption of files can be used. (1) This is where files are stored in a coded form (1) and where an encryption key is needed to interpret the contents. (1)</p> <p>A firewall can be used to prevent unauthorised access to the network. (1) A firewall will check all incoming requests for network services (1) and block any that are from suspect sources. (1)</p> <p>Appropriate physical security measures (1) are necessary to protect data.</p> <p>An access control system (1) can be used to limit staff to only those transactions necessary for their job, thereby preventing fraudulent use of systems. (1)</p> <p>Access control systems provide privacy by allowing only users with appropriate authorisation to access personal information. (1)</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.5 Components of ICT systems.</p>	
	<p>Notes for examiners</p> <p>A depth or breadth question. At least two security measures needed for maximum marks.</p>	

3	<p>Alisha Khan is concerned about the introduction of automated turnstiles and the type of changeover method to use.</p> <p>Compare the two changeover methods being considered and justify the option you consider most appropriate for Redfield Football Club.</p>	(8 marks)
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of the methods of introducing ICT systems and applying it to the Redfield scenario.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>One mark per point made/further marks for extension points. One mark for providing a justification. Maximum of seven marks if the answer does not contain a justification.</p>	
	<p>Example Answer</p> <p>A direct changeover is when one system is terminated and another takes over immediately. (1) If there were errors in Redfield's new system (1) the turnstiles would not operate correctly, adversely affecting the business and the attitude of Redfield's fans. (1)</p> <p>An alternative is a phased changeover, where changes take place progressively over a period of time (1), with functions of the original system reducing and functions of the new system increasing (1) until the new system is complete. This means Redfield can ensure that no errors are included and, if there are some, they can be resolved before the whole system is implemented. (1) However, this will take some time to implement. (1)</p> <p>I recommend the phased changeover with my justification being that this would be the least risk option for Redfield (1) which is important to maintain the good relationship with fans.</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.10 Implementation of an effective ICT-related system.</p>	
	<p>Notes for examiners</p>	

4	<p>Explain, using examples, how the following could be used by Redfield Football Club:</p> <ul style="list-style-type: none"> • A Customer Relationship Management (CRM) system • Social Networking. 	(15 marks)
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of the use of CRM and social networking and their application to the context of Redfield AFC.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first and work up to the highest band to ascertain the most appropriate band, then allocate marks within that band.</p>	
	<p>Low mark range (0-5) Candidate confines answer to partial descriptions of the use of CRM and/or social networking, with reference to the Redfield AFC situation.</p> <p>Medium mark range (6-10) Candidate describes CRM and/or social networking, with some explanation of how they could be used by Redfield AFC. Some examples included.</p> <p>High mark range (11-15) Candidate explains clearly how both CRM and social networking can be used by Redfield AFC. A range of examples are included which demonstrate clear understanding and knowledge.</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.2 and 3.3.1 Emerging technologies and their implications.</p>	
	<p>Notes for examiners</p>	

5	<p>Redfield Football Club's supporters currently have the option of purchasing merchandise and season tickets either online or using a paper order form.</p> <p>Discuss the advantages to both Redfield Football Club and its supporters of offering online purchasing.</p>	(9 marks)
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of e-commerce systems.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>One mark per advantage discussed and further marks for valid extensions or examples.</p> <p>Note that advantages relating to both RFC and its supporters are required, otherwise the maximum marks are six.</p>	
	<p>Example answer</p> <p>The advantages to Redfield FC of providing online purchasing, is that all transactions can be automatically recorded and stored. (1) Online purchasing may also boost sales around the country (1) as it means fans will not have to travel to purchase a product. (1) This will allow sales to be completed 24 hours a day (1) which means Redfield can make sales even when the shop is closed. (1)</p> <p>Online purchasing benefits the supporters as it is an easy way to purchase a product quickly (1) and without visiting the store. (1) Supporters may not be able to get to the shop during open hours (1) so this allows them to purchase whenever it is convenient for them. (1)</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.2 Use of ICT for a range of purposes.</p>	
	<p>Notes for examiners</p>	

6	<p>The table below contains descriptions of four testing techniques.</p> <p>Complete the table below by naming the testing technique for each description.</p>	(4 marks)										
<p>Purpose of the Question</p> <p>To assess knowledge and understanding of testing techniques.</p>												
<p>Guidance for examiners on how to mark this question</p> <p>Technique 1 – give marks for volume testing or scalability testing or load testing Technique 2 – give mark for multi-platform testing or platform testing Technique 3 – give mark for test harness Technique 4 – give mark for regression testing or simulated environments</p>												
<p>Example answer</p> <table><tr><th>Description of testing technique</th><th>Name of testing technique</th></tr><tr><td>Testing a system or a network to assess its performance with large amounts of data.</td><td><i>Volume testing</i></td></tr><tr><td>Testing using a different type, version or release of PC software or hardware from the ones used for development.</td><td><i>Multi-platform testing</i></td></tr><tr><td>Software which automates testing and enables repetitive testing to occur with minimal programmer involvement.</td><td><i>Test harness</i></td></tr><tr><td>Involves having pre-set files, inputs and accepted results. This enables testing of new versions of systems to be repeated using the same files and input, thereby avoiding the need to devise a new test each time a change is made.</td><td><i>Regression testing</i></td></tr></table>		Description of testing technique	Name of testing technique	Testing a system or a network to assess its performance with large amounts of data.	<i>Volume testing</i>	Testing using a different type, version or release of PC software or hardware from the ones used for development.	<i>Multi-platform testing</i>	Software which automates testing and enables repetitive testing to occur with minimal programmer involvement.	<i>Test harness</i>	Involves having pre-set files, inputs and accepted results. This enables testing of new versions of systems to be repeated using the same files and input, thereby avoiding the need to devise a new test each time a change is made.	<i>Regression testing</i>	
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<p>Area of the Specification and AOs this question covers</p> <p>3.3.9 Test and implement an effective ICT solution.</p>												
<p>Notes for examiners.</p>												

7	<p>An organisation is considering using an outsourcing company rather than the internal ICT department it currently has.</p> <p>Discuss the benefits and drawbacks of using outsourced ICT services rather than an internal ICT department in terms of cost, flexibility and management.</p>	(13 marks)
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of external and internal resources.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first and work up to the highest band to ascertain the most appropriate band, then allocate marks within that band.</p>	
	<p>Example answer</p> <p>Low mark range (0-5) Benefits and/or drawbacks are described with limited reference, if any, to cost, flexibility and management. .</p> <p>Medium mark range (6-9) Benefits and/or drawbacks are described with some reference to cost or flexibility or management.</p> <p>High mark range (10-13) Candidate discusses benefits and/or drawbacks and makes references to cost, flexibility and management.</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.12 Evaluate solutions and performance.</p>	
	<p>Notes for examiners</p> <p>A depth or breadth question.</p>	

8	<p>All organisations operating large scale systems need to be prepared in case a disaster occurs.</p> <p>Explain what an organisation should consider to prepare for a possible disaster and what recovery options may be available to them.</p>	(15 marks)
	<p>Purpose of the Question</p> <p>To assess knowledge and understanding of DR strategy and options.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first and work up to the highest band to ascertain the most appropriate band, then allocate marks within that band.</p>	
	<p>Example answer</p> <p>Low mark range (0-5) Candidate identifies some considerations and/or DR options with little or no explanation.</p> <p>Medium mark range (6-10) Candidate describes some considerations and DR options. Some explanation is included.</p> <p>High mark range (11-15) Candidate explains a range of considerations and DR options appropriate to an organisation operating large scale systems.</p>	
	<p>Area of the Specification and AOs this question covers</p> <p>3.3.10 Components of ICT systems.</p>	
	<p>Notes for examiners</p> <p>Max 10 if answered in context of small organisations.</p>	

9	<p>By 2015 it is expected that broadband speeds will be many times faster than existing broadband speeds.</p> <p>Discuss the impacts these faster broadband speeds are likely to have on individuals, organisations and society.</p> <p>In this question you will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.</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></p> <p>Area of the Specification and AOs this question covers</p> <p>3.3.1 Emerging technologies and their implications for future use of ICT.</p> <p>Notes for examiners</p> <p>No ticks or other annotation to be used on the script, just the final total. Start at the bottom band and work up.</p>	

	<p>Low mark range</p> <p>Candidate identifies some impacts. Candidate typically uses a form and style of writing which is barely appropriate for its purpose. 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 possible impacts linked to at least one of individuals, organisations and society. Discussion points may be confined to extended use of internet facilities rather than the impact of faster broadband speeds. Candidate uses a form and style of writing which is sometimes appropriate for its purpose but with many deficiencies. 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 possible impacts on individuals, organisations and society. Meanings and arguments are clear. 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 shows clear understanding of the likely impacts of increased broadband speeds on individuals, organisations and society. 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. 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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