



**General Certificate of Education (A-level)
January 2012**

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.

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SECTION A

1(a)	<i>List four typical areas of responsibility for the Chief Information Officer (CIO) of Eurotradeon.</i>	<i>(4 marks)</i>
	Guidance for examiners on how to mark this question 1 mark for each valid area of responsibility listed.	
	Example answer The Chief Information Officer is responsible for: ICT Budget (1) Information Security (1) Overall ICT leadership (1) The provision of ICT services for users (1)	

<p>1(b)</p>	<p><i>Prior to her retirement, the CIO has been called to a meeting with the other company directors. The main item on the agenda is the technology life cycle and the continued use of leading edge technology by Eurotradeon. Discuss the technology life cycle and the suitability of Eurotradeon continuing their strategy of using leading edge technology.</i></p>	<p>(12 marks)</p>
	<p>Guidance for examiners on how to mark this question</p> <p>Low mark range Candidate demonstrates some basic knowledge of the technology life cycle and/or leading edge technology. 0 – 4 marks</p> <p>Medium mark range Candidate demonstrates some understanding of the technology life cycle and use of leading edge technology in the context of Eurotradeon. 5 – 8 marks</p> <p>High mark range Candidate shows a clear understanding of both the technology life cycle and leading edge technology in the context of Eurotradeon's business. 9 – 12 marks</p>	

2	<p><i>Compare cloud computing services with outsourced computing services in terms of service provision, flexibility and charging mechanisms.</i></p>	(9 marks)
<p>Guidance for examiners on how to mark this question</p> <p>One mark for each valid point made. Maximum of 8 marks if no comparison is made. For full marks there must be at least one valid point made for each of service provision, flexibility and charging mechanisms.</p>		
<p>Example answer</p> <p>Cloud computing companies provide standard software applications via an internet connection (1), whilst, typically, outsourcing companies will provide services via a dedicated link (1). Organisations may have to use more than one cloud computing company as, typically, they specialise in only one type of system. (1)</p> <p>Subscribing to a cloud computing facility allows companies to avoid purchasing expensive software applications (1); it is therefore suitable for small to medium-sized companies or companies wishing to trial applications (1). Outsourcing companies cannot provide this flexibility (1), as all software has to be installed and paid for before any trial can take place. (1)</p> <p>Cloud computing companies often charge on a per usage basis (1), whereas for an outsourcing company charging is generally for the total IT service provision. (1)</p>		

<p>3</p>	<p><i>Online traders have to comply with the Electronic Commerce (EC Directive) Regulations 2002.</i> <i>Describe the main features of these regulations and how they should be implemented.</i></p>	<p>(6 marks)</p>
<p>Guidance for examiners on how to mark this question</p> <ul style="list-style-type: none"> • One mark for purpose of the EC Directive. • One mark for each feature listed, plus further marks for valid descriptions and examples. • Max of 3 marks if features only listed. • For maximum marks at least one implication for implementation must be included. 		
<p>Example answer</p> <p>These regulations were developed to protect on-line purchasers. (1) The regulations state that when making a transaction, details of the on-line organisation must be made available, such as: trading name & address (1) and contact details including an email address (1).</p> <p>When developing an on-line system, traders must provide the buyer with a correction option (1), the terms and conditions of the order (1) and an electronic receipt for the order (1).</p>		

<p>4(a)</p>	<p><i>David Bowen, as the Director of Training and Support Services, is tasked with developing and implementing the most appropriate forms of training and support for Eurotradeon’s customers and Eurotradeon’s staff.</i></p> <p><i>Describe and justify one training method that could be appropriate for Eurotradeon’s customers.</i></p>	<p>(5 marks)</p>
	<p>Guidance for examiners on how to mark this question</p> <p>One mark for simply identifying a suitable training method. For full marks must be description and justification.</p>	
	<p>Example answer</p> <p>A suitable training method for small online traders would be to use training manuals (1), which, for example, could give a set of step-by-step instructions on using computer software (1). This training method would enable the on-line traders to repeat parts of the training they are unsure of (1). Also, they can use the training manuals to train themselves at their own pace (1) and when they have time available (1).</p>	

4(b)	<i>Describe other training methods that could be appropriate for Eurotradeon's staff.</i>	<i>(10 marks)</i>
<p>Guidance for examiners on how to mark this question</p> <p>This is a depth and breadth question and full marks may be given for two training methods described in depth or for more than two training methods described in less depth. One mark per training method, plus further marks for valid extensions or examples.</p> <p>Repeat that more than one training method must be considered to gain maximum marks. The example answer shows just two.</p>		
<p>Example answer</p> <p>A large ecommerce organisation like Eurotradeon could use Computer Based Training (CBT) as a method to train its staff (1). This method has the advantage that all employees receive the same training to the same standard (1) and individuals can repeat the lessons of which they are unsure or wish to revise (1). Although CBT packages can be expensive to purchase (1), Eurotradeon can use it to train many staff and thereby spread the costs (1).</p> <p>Another training method that could be used by a large organisation is a formal course at an external training centre (1). The main advantage of this method is that employees can focus on the course material without distractions from the workplace (1) and the employees on their return can then share their knowledge with others in what is known as cascade training (1). The course providers could tailor the course to Eurotradeon's requirements (1) by using material specific to its business (1).</p>		

4(c)	<i>Describe one support method that could be appropriate for Eurotradeon's customers.</i>	<i>(3 marks)</i>
	Guidance for examiners on how to mark this question One mark for identifying a suitable support method plus further marks for valid extensions and examples.	
	Example answer A suitable support method for small online traders would be to provide an on-line help facility (1). This could consist of a FAQ section (1) and an email facility (1) to Eurotradeon's technical staff.	

5(a)(i)	<i>A variety of linear and iterative methods can be used to develop systems. Explain how a linear development methodology is used to develop systems.</i>	<i>(5 marks)</i>
<p>Guidance for examiners on how to mark this question</p> <p>One mark for each valid explanatory point. Award a maximum of 2 marks for merely listing phases of a linear method.</p>		
<p>Example answer</p> <p>A linear development methodology is used to break down a project into a series of sequential phases (1), which are carried out in a linear approach with phases being signed off formally (1) prior to next stage commencing (1). The Requirements Definition is an example of one stage (1) and standards exist to guide developers (1).</p>		

5(a)(ii)	<i>Explain why a linear development methodology might be used for developing a system that has clearly defined and documented business requirements and which needs to be implemented by a set deadline.</i>	<i>(4 marks)</i>
<p>Guidance for examiners on how to mark this question</p> <p>1 mark for each valid reason or expansion thereof for choosing linear development in these circumstances.</p>		
<p>Example answer</p> <p>Because the business requirements are already known the subsequent stages can be planned with certainty (1) and developed by staff with traditional/generic ICT skills. (1)</p> <p>A linear method will provide formal reviews and signing-off of each phase before the next one starts (1), which will help to track progress (1).</p>		

5(b)	<i>Explain how an iterative development methodology is used to develop systems.</i>	<i>(3 marks)</i>
	<p>Guidance for examiners on how to mark this question</p> <p>One mark for each valid explanatory point.</p>	
	<p>Example answer</p> <p>System requirements are broken down into a series of small phases (1) with each phase being agreed and/or developed in detail prior to the whole requirement being agreed. (1) The methodology allows “loop back” to previous phases should business requirements change or become clearer. (1)</p>	

6	<p>The first row of the table below lists the actions that could be used to reduce the likelihood of a virus attack. Complete the other rows by listing three actions for each of the remaining security issues. Do not use the same action twice.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">SECURITY ISSUE</th> <th style="text-align: center;">ACTIONS</th> </tr> </thead> <tbody> <tr> <td>Virus attack</td> <td> <ol style="list-style-type: none"> 1. Use an anti-virus scanning package 2. Keep it up-to-date 3. Training staff not to open unsolicited emails </td> </tr> <tr> <td>Loss of data</td> <td> <ol style="list-style-type: none"> 1. 2. 3. </td> </tr> <tr> <td>Unauthorised system access</td> <td> <ol style="list-style-type: none"> 1. 2. 3. </td> </tr> <tr> <td>Unauthorised physical access to ICT facilities</td> <td> <ol style="list-style-type: none"> 1. 2. 3. </td> </tr> </tbody> </table>	SECURITY ISSUE	ACTIONS	Virus attack	<ol style="list-style-type: none"> 1. Use an anti-virus scanning package 2. Keep it up-to-date 3. Training staff not to open unsolicited emails 	Loss of data	<ol style="list-style-type: none"> 1. 2. 3. 	Unauthorised system access	<ol style="list-style-type: none"> 1. 2. 3. 	Unauthorised physical access to ICT facilities	<ol style="list-style-type: none"> 1. 2. 3. 	(9 marks)
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<p>Guidance for examiners on how to mark this question</p> <p>One mark only for each identified action (1, 2 & 3). Do not give marks for duplicate actions. Training if qualified in context gains credit.</p>												
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<p>7(a)</p>	<p><i>An organisation's business goals is one of the factors that influences its ICT strategy.</i> <i>Explain a range of other factors that should be taken into account when developing an ICT strategy.</i></p>	<p>(7 marks)</p>
<p>Guidance for examiners on how to mark this question</p> <ul style="list-style-type: none"> • One mark for each factor identified, plus a maximum of two extensions or examples for each factor. • If only a list of factors is provided, the maximum number of marks is 4. 		
<p>Example answer</p> <p>Available finance (1) should be taken into account as it is important that the organisation can afford any proposed ICT strategy (1).</p> <p>Geography of clients (1) is important as this will help determine the type and size of network required (1).</p> <p>Legacy systems (1) should be considered as the ICT strategy may be constrained by existing business-critical legacy systems (1). For example, changing to new hardware or software may not be possible (1).</p>		

7(b)	<i>Identify the issues that could arise if an organisation fails to consider the business goals when developing an ICT strategy.</i>	<i>(3 marks)</i>
	<p>Guidance for examiners</p> <p>1 mark per issue/expansion/example.</p>	
	<p>Example answer</p> <p>The use of technology for technology's sake could be a costly mistake (1) without first discussing, analysing and agreeing with an organisation how technology will be of assistance. (1)</p> <p>Without long-term business planning, the ICT solutions that may be appropriate for the present may not be right for the future. (1)</p>	

<p>8</p>	<p><i>A virtual company can be described as an organisation where the employees are geographically dispersed, work from home and use ICT to operate most aspects of the business.</i></p> <p><i>Discuss how emerging ICT technologies could be used to operate a virtual company. Include in your discussion the social and environmental issues surrounding the growth of virtual companies.</i></p> <p><i>The quality of written communication will be assessed in your answer.</i></p>	<p>(20 marks)</p>
	<p>Guidance for examiners on how to mark this question</p> <p>Continuous prose is expected for this answer.</p>	
	<p>Low mark range</p> <p>Candidate identifies some emerging ICT technologies or mentions social or environmental issues. Uses a form and style of writing that 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. 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 marks</p> <p>Medium mark range</p> <p>Candidate describes some emerging ICT technologies and/or some social/ environmental issues. 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 marks</p> <p>Good mark range</p> <p>Candidate explains relevant emerging ICT technologies and/or the social/ environmental issues. 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 to virtual companies and well structured. There may be occasional errors of spelling, punctuation and grammar. Text is legible.</p> <p style="text-align: right;">11 – 15 marks</p> <p>High mark range</p> <p>Candidate discusses the relationship between emerging ICT technologies and their use in virtual companies and clearly identifies the social and environmental issues involved. 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. 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 marks</p>	