



General Certificate of Education (A-level)
June 2011

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 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.

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1	<p><i>Based on the list of bullet points in Magazine article B, an ICT Manager has begun to prepare a slide presentation for management and employees to show how energy and costs could be reduced. She is required to work on a more urgent problem and you have been asked to assist with the slide presentation.</i></p> <p><i>Complete the missing bullet points on slides 3, 4 and 5 on pages 3 and 4.</i></p>	
1(a)	<p>Guidance for examiners on how to mark this question</p> <p>1 mark for each relevant bullet point inserted. Bullets could be from management or employee viewpoint.</p> <hr/> <p>Example answer</p> <p style="text-align: center;">Slide 3 – HOT DESKING</p> <p>What is hot desking?</p> <ul style="list-style-type: none"> Employee uses any available desk. (1) <p>How will this save energy?</p> <ul style="list-style-type: none"> Less ICT equipment. (1) <p>How will this save costs?</p> <ul style="list-style-type: none"> Reduced ICT infrastructure. (1) <p>What is a major implication?</p> <ul style="list-style-type: none"> Restrictions on how many staff can visit office at one time. (1) 	(4 marks)
1(b)	<p>Guidance for examiners on how to mark this question</p> <p>1 mark for each relevant bullet point inserted. Bullets could be from management or employee viewpoint.</p> <hr/> <p>Example answer</p> <p style="text-align: center;">SLIDE 4 – PURGING</p> <p>What is purging?</p> <ul style="list-style-type: none"> The removal of programs/data from ICT storage. (1) <p>How will this save energy?</p> <ul style="list-style-type: none"> Fewer storage devices. (1) <p>How will this save costs?</p> <ul style="list-style-type: none"> Less ICT equipment needed. (1) <p>What is a major implication?</p> <ul style="list-style-type: none"> Purged data cannot be restored. (1) 	(4 marks)

1(c)	Guidance for examiners on how to mark this question	(4 marks)
	<p>1 mark for each relevant bullet point inserted. Bullets could be from management or employee viewpoint. Note that a virtual server is not the same as server virtualisation.</p>	
	<p>Example answer</p> <p style="text-align: center;">SLIDE 5 – SERVER VIRTUALISATION</p> <p>What is server virtualisation?</p> <ul style="list-style-type: none">• Multiple servers are re-housed on a reduced number of servers/single server. (1) <p>How will this save energy?</p> <ul style="list-style-type: none">• Reduced amount of server equipment. (1) <p>How will this save costs?</p> <ul style="list-style-type: none">• Reduced amount of equipment maintenance. (1) <p>What is a major implication?</p> <ul style="list-style-type: none">• More time needed to reconfigure servers and test. (1)	

2(a)	<p><i>The author of magazine article A states that “for applications systems, though, organisation should consider using packages instead of bespoke systems”.</i></p> <p><i>Describe common business activities for which packages are available to provide ICT systems for organisations.</i></p>	(9 marks)
	<p>Guidance for examiners on how to mark this question</p> <p>This is a depth and breadth type question/answer. 1 mark per business activity identified, plus 1 mark for each valid description or expansion which could include the type of package. Must have a business activity before giving a mark for a package. At least two business activities required for max marks.</p>	
	<p>Example answer</p> <p>Payroll is a common business activity for which an application package is available. (1) This is because most organisations have staff to pay. (1)</p> <p>Personnel is another common business activity (1) as all medium to large organisations require ICT systems to manage their staff records. (1) Personnel packages are often linked with payroll packages (1) and access control systems (1), as much of the information held is common across all applications. (1)</p> <p>Another common business activity is the production of an invoice (1) for which word processing could be used. (1)</p>	

2(b)	<i>In the context of the arguments put forward in Magazine article A, describe how a “software scrappage” scheme could assist an organisation in a move towards green computing.</i>	(4 marks)
	Guidance for examiners on how to mark this question One mark for each relevant point made.	
	Example answer A software scrappage scheme could work by financial incentives being given (1) to encourage organisations to replace obsolete legacy systems with new packages. (1) Organisations would consume fewer resources, as they would no longer need to support the old systems because support would form part of the package. (1) This support saving would translate into energy savings. (1)	

3	<p><i>Magazine article B suggests that with some creative thought, the Government could take further initiatives.</i></p> <p><i>Discuss other initiatives that could encourage ICT users to change their procedures in order to reduce energy consumption.</i></p>	(8 marks)
	<p>Guidance for examiners on how to mark this question</p> <p>Note that this question is about procedures or activities that lead to changed procedures. 1 mark per initiative plus 1 mark per valid extension/example. At least two initiatives required for max marks Accept any valid Government or non-Government initiatives.</p>	
	<p>Example answer</p> <p>An energy-efficiency audit of an organisation's ICT operation could be required. (1). This could be either voluntary or compulsory (1), but could be made a requirement for any company wishing to tender for public business. (1)</p> <p>Legislation could be used. (1) For example, the Data Protection Act could be extended to include an annual audit of data and information retained. (1) This would ensure strict adherence to the principle that data is not kept longer than is necessary. (1)</p> <p>Government could use media advertising to encourage use of energy-efficiency (1), possibly endorsed by celebrities (1).</p>	

4	<p><i>Discuss how a combination of the approaches contained in both Magazine articles A and B could be used to reduce the energy consumption and costs involved in providing ICT services, for example in a typical school or college environment.</i></p>	(15 marks)
	<p>Guidance for examiners on how to mark this question</p> <p>Examiners must first determine the band by looking at the approaches considered and quality of the candidate's response.</p> <p>The mark within the band is awarded based on their knowledge and understanding.</p> <p>The question gives an example in an educational context, but any relevant organisational context is acceptable.</p> <p>Consider each answer by starting at the low mark range and working up until the range appropriate for the answer is reached. No ticks or annotation is required – just the total mark.</p> <p>QWC is not assessed in this question.</p>	
	<p>Low mark range Candidate identifies how approaches in A and/or B could be used to reduce energy consumption and costs. 0 – 5 marks</p> <p>Medium mark range Candidate describes how approaches in A and/or B could be used to reduce energy consumption and costs, but not necessarily in an organisational context. 6 – 10 marks</p> <p>High mark range Candidate discusses in detail how a combination of both approaches in A and B could be used to reduce energy consumption and costs in an appropriate organisational context. 11 – 15 marks</p>	

5	<p><i>An organisation uses many different types of printers and has numerous pre-printed forms used for bulk printing.</i></p> <p><i>Discuss the factors that should be considered when managing the stock control of printer consumables including pre-printed forms.</i></p>	(8 marks)
	<p>Guidance for examiners on how to mark this question</p> <p>Examiners should assess the candidate's understanding of how ICT printer consumables are managed. This is a depth and breadth question. 1 mark per factor listed, 1 mark for each extension/example. At least two factors for max marks.</p>	
	<p>Example answer</p> <p>The organisation will need to keep a sufficient stock of pre-printed forms to meet the immediate needs of its users (1), with a contingency stock to meet minor emergencies (1) sized at around 6 weeks' usage, as this is the probable time it would take to get new stock ordered and printed. (1)</p> <p>The organisation should also consider the pattern of usage of its printers (1), as some may be used more heavily at certain times of the year or month depending on activity or business levels (1).</p> <p>In the longer term, the organisation should strive to standardise the printers used (1), thereby reducing the need to keep stocks of different types of ink and toner cartridges. (1) Also, by changing the printing software to use modern printers, it may be possible to reduce or eliminate the need for pre-printed forms. (1)</p>	

6	<i>Discuss the issues involved in testing large ICT systems.</i>	<i>(15 marks)</i>
	<p>Guidance for examiners on how to mark this question</p> <p>Low mark range Candidate identifies general issues involved in testing. 0 – 5 marks</p> <p>Medium mark range Candidate describes general issues involved in testing. Some references may be made to large systems. 6 – 10 marks</p> <p>High mark range Candidate discusses issues involved in testing large systems, showing a good understanding of what is involved. 11 – 15 marks</p>	

7	<p><i>An organisation has commissioned an external software company to develop a bespoke system and is considering what support will be required when the system is implemented.</i></p> <p><i>Discuss the factors that an organisation should consider when deciding on a suitable support option.</i></p>	(9 marks)
	<p>Guidance for examiners on how to mark this question</p> <p>This is a depth and breadth question about factors behind the choice of a support system. 1 mark per factor, 1 mark for each relevant expansion/example For max marks, must address at least two factors. No marks to be awarded for support suitable only for package systems – such as user groups/forums.</p>	
	<p>Example answer</p> <p>A factor the organisation should first consider the importance of the system to its business (1) and then consider available support options against that importance. (1) It should also consider the practicality and cost of the support option chosen. (1)</p> <p>If the organisation is wholly dependent upon the system, it may consider on-site support. (1) This would be appropriate for an on-line airline booking system (1), as the airline would lose business for every minute the system is not working. (1)</p> <p>Another factor is the expertise available within the organisation should also be taken into account. (1) If the organisation has its own experienced ICT staff, they might be able to use some form of on-line support (1) that enables them to carry out the required functions. (1)</p>	

8	<i>Organisations today cannot function effectively without the use of ICT systems. Discuss.</i>	(20 marks)
<p>Guidance for examiners on how to mark this question</p> <p>The examiners are seeking an understanding of the types of ICT systems used by organisations. No set organisational type is assumed and it should be noted that the Specification clearly states that students will study the subject through the investigation of the uses made of ICT by a range of organisations.</p> <p>Candidates are expected to discuss different types of ICT systems and associated organisational functions and their effectiveness in this role. Typical examples could include, but not be limited to: CRM, decision support systems, e-commerce, stock control, order processing, accounting, office software, communication systems, etc.</p> <p>Key words in the question are “function effectively” and “ICT systems”; therefore students must show an understanding of organisational functions and use of ICT systems.</p> <ul style="list-style-type: none"> • The mark awarded must not be dependent solely on the number of ICT systems mentioned. • No ticks or other annotation to be used on the script, just the final total. • Start at the bottom band and work up. 		
<p>Low mark range</p> <p>Candidate identifies at least one ICT system and the organisational function supported. Candidate has used a form and style of writing 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 those areas. Text is barely legible.</p> <p style="text-align: right;">0 – 5 marks</p>		
<p>Medium mark range</p> <p>Candidate identifies ICT systems and the relevant organisational functions supported. Candidate has used a form and style of writing 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 of information 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 those areas. Text is legible.</p> <p style="text-align: right;">6 – 10 marks</p>		
<p>Good mark range</p> <p>Candidate describes ICT systems and the relevant organisational functions supported. Meaning is 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 marks</p>		
<p>High mark range</p> <p>Candidate describes ICT systems and discusses the relevant organisational functions that could be supported using appropriate examples to justify their arguments. Meaning is clear. Candidate has selected and used a form and style of writing appropriate for its 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>		