

A-LEVEL

ICT

Unit 3: The Use of ICT in the Digital World
Mark scheme

2520
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Version 1.0 Final

Mark schemes are prepared by the Lead Assessment Writer 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 associates 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 associate understands and applies it in the same correct way. As preparation for standardisation each associate 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, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

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.

Further copies of this Mark Scheme are available from aqa.org.uk

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. 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

1	<p>Top Hat Consulting is an outsourcing and consultancy company.</p> <p>Describe what is meant by outsourcing.</p>	(4 marks)
<p>Purpose of the Question</p> <p>Tests knowledge and understanding of outsourcing.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>One mark for each valid point, including ICT examples and advantages/disadvantages.</p>		
<p>Example answer</p> <p>Outsourcing is where one organisation (1) takes full or partial responsibility for another organisation's ICT. (1)</p> <p>It is a formal contractual arrangement (1) with service levels clearly defined. (1)</p>		
<p>Area of the Specification this question covers</p> <p>3.3.12.1</p>		

2 (a)	Explain the possible disadvantages of the location dongle.	<i>(4 marks)</i>
	<p>Purpose of the Question Tests for knowledge and understanding of future technology. This question is a differentiator.</p>	
	<p>Guidance for examiners on how to mark this question</p> <p>One mark per disadvantage plus further marks for extensions or explanations. For maximum marks at least two disadvantages are required.</p>	
	<p>Example answer</p> <p>One disadvantage is that credit card purchases can only be made in one fixed location (1). This may appeal to those living and working from home but would disadvantage those who travel or work away from home (1) as they are no longer in range of the location dongle (1).</p> <p>Hackers might be able to simulate the GPS position by reading network traffic. (1)</p>	
	<p>Area of the Specification this question covers</p> <p>3.3.1.2</p>	

2(b)	<p>Matt Brady proposed that a location dongle be used to reduce debit and credit card fraud.</p> <p>Discuss alternative methods that could help to reduce debit and credit card fraud.</p>	<i>(8 marks)</i>
<p>Purpose of the Question</p> <p>Tests understanding of emerging/future technology and its possible use.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>One mark for identifying a method and further marks for extensions. More than one method needed for full marks.</p>		
<p>Example answer</p> <p>One alternative would be for users to be supplied with retinal or fingerprint scanners. (1) A scan would be taken and stored by the credit card company (1) and, only if there is a match at the time of purchase, would the sale be allowed. (1) The cost of the scanners might be an issue. (1)</p> <p>Another option would be to update the card system to text the card user whenever a purchase is made. (1) This would alert the user to any unauthorised transactions. (1)</p> <p>A final option could be for users to have a chip embedded under their skin; (1) their physical presence would then be needed before a transaction could take place. (1)</p>		
<p>Area of the Specification this question covers</p> <p>3.3.1.2</p>		

3	Describe some of the factors that could contribute to the successful development of the proposed Referendum System	<i>(7 marks)</i>
<p>Purpose of the Question</p> <p>Tests knowledge and understanding of the factors needed for a successful systems development.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>One mark for each factor, plus extension marks for expansions or examples.</p> <p>Must have at least two factors for maximum marks</p> <p>No more than three marks for factors without a valid description.</p>		
<p>Example answer</p> <p>Involvement of senior government officials and administrators (1) at all levels (1) will ensure that the overall objectives and limitations (1) of the project are understood at the management level.</p> <p>The system must be tested by the users (1) and formally signed off (1).</p> <p>ICT teamwork (1) is necessary. Members of the development teams need to work together and communicate (1) with each other.</p>		
<p>Area of the Specification this question covers</p> <p>3.3.7.1</p>		

4	<p>There are three categories of user for the proposed Referendum System.</p> <p>Recommend and justify an appropriate training method for each of the three categories of user.</p>	(15 marks)
<p>Purpose of the Question</p> <p>Tests knowledge and understanding of training methods for large systems.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first, work up to the highest band to ascertain the most appropriate band and then allocate marks within that band. Note that the categories of user are: senior government officials, administrators and voters.</p>		
<p>Example answer</p> <p>Zero mark (0 marks) Candidate has written nothing that is worthy of credit</p> <p>Low mark range (1-5) Candidate identifies one or two user categories and provides some understanding of appropriate training methods. A recommendation and/or justification may not be made.</p> <p>Medium mark range (6-10) Candidate identifies the user categories but may not justify appropriate training or make firm recommendations for each category.</p> <p>High mark range (11-15) Candidate identifies the user categories and makes appropriate and justified recommendations.</p>		
<p>Area of the Specification this question covers</p> <p>3.3.11.1 and 3.3.11.2</p>		

5	Explain how a combination of workflow systems and document management systems could be used to improve productivity in a large organisation.	(12 marks)
<p>Purpose of the Question</p> <p>An area not previously examined and which is highlighted in the Specification.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first, work up to the highest band to ascertain the most appropriate band and then allocate marks within that band.</p>		
<p>Example answer</p> <p>Zero mark (0 marks) Candidate has written nothing that is worthy of credit</p> <p>Low mark range (1-4) Candidate provides an outline description of workflow and/or document management systems and may not explain how productivity could be improved.</p> <p>Medium mark range (5-8) Candidate explains how workflow and/or document management systems could be used and may attempt to explain how productivity could be improved.</p> <p>High mark range (9-12) Candidate explains how workflow and document management systems could be used together to increase productivity, including the allocation of transaction codes to incoming email and mail, and the routine sifting of job queues.</p>		
<p>Area of the Specification this question covers</p> <p>3.3.2.8</p>		

6	Complete Table 1 by adding the possible ICT implications each business	(6 marks)
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factor may have. Do not use the same implication more than once.

Business factor	ICT Implication 1	ICT Implication 2
The business has a goal of increasing sales by 20% each year.	<i>May have to purchase and install additional network capacity.</i>	
The business wishes to replace its legacy accounts system.		
There is limited availability of finance and the ICT budget is to be frozen for two years.	<i>May have to propose reduced levels of service.</i>	
The business wishes to sell products via the internet.		

Purpose of the Question

A “doing” question.

Guidance for examiners on how to mark this question

One mark for each valid implication.

Example answer

Business factor	ICT Implication 1	ICT Implication 2
The business has a goal of increasing sales by 20% each year.	<i>May have to purchase and install additional network capacity.</i>	May need to employ more ICT staff.
The business wishes to replace its legacy accounts system.	Need to consider user requirements for new system.	Need to consider if the new system will be a bought package or a bespoke development.
There is limited availability of finance and the ICT budget is to be frozen for two years.	<i>May have to propose reduced levels of service.</i>	Need to review all current licence and maintenance costs and make savings.

	The business wishes to sell products via the internet.	Need to consider appropriate security.	May need to recruit staff with knowledge of developing internet-based systems.	
	Area of the Specification this question covers			
	3.3.4.1			

7	<p>Large scale systems will require regular maintenance.</p> <p>Discuss the issues involved.</p>	(12 marks)
<p>Purpose of the Question</p> <p>Tests knowledge and understanding of maintenance issues in large/international organisations.</p> <p>This question goes beyond the simple understanding of the categories of maintenance. It requires the candidate to consider other issues, including the maintenance resources available, the priority for each maintenance task and the likely user involvement for testing and acceptance, given it is an international organisation.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first, work up to the highest band to ascertain the most appropriate band and then allocate marks within that band.</p>		
<p>Example answer</p> <p>Zero mark (0 marks) Candidate has written nothing that is worthy of credit</p> <p>Low mark range (1-4) Candidate describes how some categorisation of maintenance may be possible, but has limited understanding and does not consider issues other than categorisation.</p> <p>Alternatively, candidate discusses just one issue, without reference to categorisation.</p> <p>Medium mark range (5-8) Candidate adequately describes the three categories of maintenance shown in the Specification and demonstrates understanding, but does not identify any other issues.</p> <p>Alternatively, candidate discusses two or more issues, without reference to categorisation.</p> <p>High mark range (9-12) Candidate adequately describes the three categories of maintenance shown in the Specification and demonstrates understanding. The candidate discusses at least one other issue pertinent to large and/or international organisations.</p>		
<p>Area of the Specification this question covers</p> <p>3.3.10.5</p>		

8	Describe the key characteristics of information likely to be required by senior (strategic) management, comparing it to that required by tactical management and operational staff.	<i>(12 marks)</i>
<p>Purpose of the Question</p> <p>To test candidate knowledge of information hierarchies and the characteristics of information, such as time, level of detail, structure and purpose.</p>		
<p>Guidance for examiners on how to mark this question</p> <p>A banded marking scheme. Look at the lowest band first, work up to the highest band to ascertain the most appropriate band and then allocate marks within that band.</p>		
<p>Example answer</p> <p>Zero mark (0 marks) Candidate has written nothing that is worthy of credit</p> <p>Low mark range (1-4) Candidate identifies at least one key characteristic of information and may compare the characteristics with strategic, tactical or operational requirements.</p> <p>Medium mark range (5-8) Candidate identifies one or more key characteristics of information required by strategic management, comparing each characteristic with strategic, tactical and/or operational requirements.</p> <p>High mark range (9-12) Candidate describes more than one key characteristic of information and compares these with strategic, tactical and operational requirements.</p>		
<p>Area of the Specification this question covers</p> <p>3.3.2.3 and 3.2.2.3</p>		

9	Discuss how the size of an organisation and its geographical spread might influence the use and management of information and communication technology.	(20 marks)
<p>Purpose of the Question</p> <p>Tests knowledge and understanding of the influence that size might have on the ICT used by an organisation.</p>		
<p>Zero mark (0 marks) Candidate has written nothing that is worthy of credit</p> <p>Low mark range No real understanding of how the size of an organisation and its geographical spread might influence the ICT used, although some effects may be identified. 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;">1-5</p> <p>Medium mark range Some understanding of how the size of an organisation and its geographical spread might influence the ICT used, although these are described rather than discussed and may not be across the three areas mentioned in the question. 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 A good understanding of how the size of an organisation and its geographical spread might influence the ICT used across the three areas mentioned in the question, but the essay is weighted towards an explanation, rather than a discussion. 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 how the size of an organisation and its geographical spread would influence the ICT used across the three areas and discusses these influences using a range of relevant examples and careful arguments. The 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>	
	<p>Area of the Specification this question covers</p> <p>3.3.10.1</p>	