



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

ICT

INFO1

(Specification 2520)

**Unit 1: Practical Problem Solving 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(a)	<i>Name a storage device.</i>	<i>(1 mark)</i>
	Guidance for examiners on how to mark this question One mark for a storage device	
	Example answer Hard Disk Drive (1)	

1(b)	<i>Name a storage medium.</i>	<i>(1 mark)</i>
	Guidance for examiners on how to mark this question One mark for a storage medium or type of storage medium	
	Example answer Hard disk (1)	

2(a)	<p><i>At what stage of providing an ICT solution to a problem would you need to ask yourself the following questions:-</i></p> <p style="text-align: center;"><i>Does the solution do what it is supposed to do?</i> <i>Does the solution do it in the way it is supposed to do it?</i></p>	(1 mark)
	<p>Guidance for examiners on how to mark this question</p> <p>1 mark for either evaluation or testing stages of an ICT solution.</p>	
	<p>Example answer</p> <p>I would need to ask myself these questions at the evaluation stage of an ICT solution (1)</p>	

2(b)	<p><i>What is the purpose of asking yourself these questions?</i></p>	(2 marks)
	<p>Guidance for examiners on how to mark this question</p> <p>1 or 2 marks for describing the purpose.</p>	
	<p>Example answer</p> <p>Assessing the effectiveness of the solution (1) against the client's requirements for that solution. (1)</p>	

<p>3</p>	<p><i>For each of the diagrams below describe the technique that has been used to ensure robust data entry.</i></p> <p>(a) (b) (c) (d)</p>	<p>(2 marks) (2 marks) (2 marks) (2 marks)</p>
<p>Guidance for examiners on how to mark this question</p> <p>For each of (a)-(d) Two marks for a description of the technique used or one mark for naming the check and one mark for description</p>		
<p>Example answers</p> <p>(a) The user has been asked to input their password twice (1) if they do not match the user would be asked to re-enter them. (1)</p> <p>(b) Presence check (1) which is a form of data validation. This means the field cannot be left blank by the user. (1)</p> <p>(c) Format check. (1) This is when data needs to be in a certain format or else it will not be allowed. (1)</p> <p>(d) Length check. (1) This check ensures it is equal to 11 characters in this case. (1)</p>		

4	<i>What input devices could be used to prevent unauthorised access to an ICT classroom?</i>	<i>(2 marks)</i>
	Guidance for examiners on how to mark this question One mark per input device in context	
	Example answer Magnetic swipe card reader (1) Finger print scanner/Biometric Device (1)	

<p>5</p>	<p><i>You have been asked to provide information on the 2012 Olympic Games to a class of 11 year olds.</i></p> <p><i>Describe and justify how to provide this information using ICT.</i></p>	<p>(5 marks)</p>
<p>Guidance for examiners on how to mark this question</p> <p>Max 3 if no justification 1 mark for each relevant suggestion made or expansion thereof</p>		
<p>Example answer</p> <p>I could create a presentation to provide the information on the 2012 Olympic Games to a class of 11 year olds (1) this would be displayed on a large screen via a digital projector. (1) All the children would be able to see it clearly. (1) I could include some graphics (1) to keep the 11 year olds interested. (1)</p>		

SECTION B

6(a)	<i>With reference to your Sample Work, describe the problem for which your client needed a solution.</i>	<i>(2 marks)</i>
<p>Guidance for examiners on how to mark this question</p> <p>Check page reference first (no page reference or incorrect page reference no marks)</p> <p>Simple statement 1 mark Description 2 marks</p>		
<p>Example answer</p> <p>The problem was that my client did not have the best methods of advertising her business (1) because of the recession competition is tough and so she wants a website solution to advertise her business to attract customers (1)</p>		

6(b)	<i>Explain what is meant by the term user.</i>	<i>(2 marks)</i>
	Guidance for examiners on how to mark this question 1 mark for simple statement 2 marks for an explanation of how and why they are a user	
	Example answer In the case of a retail website the user will be the person who updates the website (1) by adding new products that have become available. (1)	

6(c)	<i>Describe how you could have identified the skills of the user(s) of your solution and justify why this would be suitable.</i>	<i>(3 marks)</i>
	<p>Guidance for examiners on how to mark this question</p> <p>One mark for how skills of user(s) can be identified One mark for a justification One mark for an expansion of either of the above</p>	
	<p>Example answer</p> <p>I could have interviewed my user. (1) I would have prepared questions before the interview (1) and these could be expanded depending on the answers given. (1)</p>	

6(d)	<i>For one of the outputs produced by your solution, describe the process(es) required and the inputs needed to produce it.</i>	<i>(6 marks)</i>
<p>Guidance for examiners on how to mark this question</p> <p>Check page reference first (no test results, no page reference(s) or incorrect page reference(s) no marks)</p> <p>Up to 4 marks for inputs Up to 4 marks for processes</p> <p>Only full marks if reference is made to both inputs and processes</p>		
<p>Example answer</p> <p>One of the outputs was an invoice; the inputs required were customer name (1), customer address, (1) product id, (1) and product quantity. (1) One process was to multiply the quantity (1) by the product price. (1)</p>		

6(e)	<i>With reference to your testing, describe tests you have completed to ensure the validity of the data input, the accuracy of the output and the presentation of the output.</i>	<i>(12 marks)</i>
<p>Guidance for examiners on how to mark this question</p> <p>Check page references first (no page reference or incorrect page references no marks)</p> <p>One mark for each valid point.</p> <p>Max 10 marks if only two of the following have been included Max 6 marks if only one of the following have been included</p> <ul style="list-style-type: none"> validity of data input accuracy of output presentation of the output 		
<p>Example answer</p> <p>To test the number of items ordered is a whole number within the range 0 - 9 (1) I used normal test data e.g. 5, (1) which was accepted (1) and I also used erroneous test data e.g. 10. (1)</p> <p>Accuracy of invoice totals (1) for example the calculation result of number of products bought and the price per product, (1) the accuracy of a calculated field has been tested by doing the same calculation on a calculator (1) and comparing the results. (1)</p> <p>To test the presentation of a webpage give selected members of the audience a questionnaire (1) to test what has been uploaded to the page (1) to check whether the content is legible (1) and to report back any problems found. (1)</p>		

7	<p><i>For each of the following state if it meets health and safety guidelines for a computer user by circling either 'Yes' or 'No' and justify your choice in the space provided.</i></p>	(15 marks)																		
<p>Purpose of the Question</p> <p>Application of knowledge and understanding of health and safety in relation to the use of ICT.</p>																				
<p>Guidance for examiners on how to mark this question</p> <p>One mark yes/no. (Up to 5 marks) Two marks for an explanation. (Up to 10 marks)</p>																				
<p>Example answers</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Equipment</th> <th style="width: 15%;">Meets Guidelines</th> <th style="width: 50%;">Justification</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;"> Yes No </td> <td>This keyboard is shaped ergonomically (1) to reduce the possibility of the user suffering from RSI. (1)</td> </tr> <tr> <td></td> <td style="text-align: center;"> Yes No </td> <td>The chair does not meet the guidelines as it is not height or tilt adjustable (1) and it is not a 5 point castor based chair for stability. (1)</td> </tr> <tr> <td><i>This could be laptop or ipad holder</i></td> <td style="text-align: center;"> Yes No </td> <td>A foot rest would be used to ensure that a user's feet were raised (1) so that they do not suffer from any form of strain on the body. (1)</td> </tr> <tr> <td></td> <td style="text-align: center;"> Yes No </td> <td>An ergonomic mouse that is shaped correctly (1) could help to prevent RSI.(1)</td> </tr> <tr> <td></td> <td style="text-align: center;"> Yes No </td> <td>A document holder will allow a user to look at documents at eye level (1) and reduce the possibility of eye strain. (1)</td> </tr> </tbody> </table>			Equipment	Meets Guidelines	Justification		Yes No	This keyboard is shaped ergonomically (1) to reduce the possibility of the user suffering from RSI. (1)		Yes No	The chair does not meet the guidelines as it is not height or tilt adjustable (1) and it is not a 5 point castor based chair for stability. (1)	<i>This could be laptop or ipad holder</i>	Yes No	A foot rest would be used to ensure that a user's feet were raised (1) so that they do not suffer from any form of strain on the body. (1)		Yes No	An ergonomic mouse that is shaped correctly (1) could help to prevent RSI.(1)		Yes No	A document holder will allow a user to look at documents at eye level (1) and reduce the possibility of eye strain. (1)
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8	<p><i>You are a young entrepreneur setting up a business to provide a Health and Fitness Gym in your local community.</i></p> <p><i>Discuss the hardware, communication technologies and software you could purchase before you start trading and why you would need them.</i></p>	(20 marks)
<p>Guidance for examiners on how to mark this question</p> <p>Low mark range</p> <p>Candidate shows little understanding and has made reference to at least one of hardware, communication technologies or software some of which may be in context. The candidate has used a form and style of writing that is barely appropriate to its purpose. The 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>Mid mark range</p> <p>Candidate describes at least two from hardware, communication technologies and software which may be appropriate. Meaning is nearly always clear. The candidate has, in the main, used a form and style of writing, which is appropriate for its purpose; with some lapses. The candidate has expressed simple ideas clearly and reasonably fluently. Candidate has used sentences and paragraphs. Information or arguments are generally relevant. There may be some errors of spelling, punctuation and grammar. Text is legible.</p> <p style="text-align: right;">6 – 10 marks</p> <p>Good mark range</p> <p>Candidate describes some hardware, communication technologies and software which may be appropriate. Some specialist vocabulary used has been explained. Meaning is clear. The candidate has, in the main, used a form and style of writing, which is appropriate for its purpose; with occasional lapses. The 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 discusses appropriate hardware, software and communication technologies in context. Any specialist vocabulary used has been explained. Meaning is clear. 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. There are few, if any, errors of spelling, punctuation and grammar. Text is legible.</p> <p style="text-align: right;">16 – 20 marks</p>		