



General Certificate of Education

Information and Communication Technology 5521

Unit 1 Information: Nature, Role and Context

Mark Scheme

2007 examination - January series

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 meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting 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 the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting 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.

Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

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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. The answers should be providing evidence of more than “man in the street” knowledge of ICT.
4. 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.
5. Rules on positioning of ticks and marks are to aid in checking and remarking of scripts.
6. 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.
7. 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.
8. One-word answers, where acceptable, will be indicated on the question paper.
9. Where a mark is only available if there is a previous correct response, i.e. a dependent mark, then this will be indicated on the mark scheme.
10. The meaning of ICT-specific words and phrases are as defined by *A Glossary of Computing Terms* (current edition) by the British Computer Society.

Specific marking guidelines

11. The basic rule is one mark, one tick. The tick is to be positioned at the point where the mark is gained in the answer and definitely **not** in the margin.
12. The only figures in the margin should be sub-totals for parts of questions and a final ringed total for a whole question.
13. Where questions are divided into parts a, b, c and so on, and a mark is indicated for each on the paper, a mark should be positioned at the end of the appropriate response in the margin.
14. There should in effect be a mark in the margin at every point there is one on the question paper and a number of ringed totals, which relates directly to the number of questions on the paper.
15. Where a question has only one part, the total for that question should be written once and then again and circled. This allows for easy checking that totalling and transcription of marks is correct.
16. All zero values should be crossed through.
17. All blank spaces should be crossed through with a vertical line through the text space – not in the margin.
18. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.
19. All blank pages must be crossed through.

- 20.** Where candidates have added to their answers later in the script, the total mark should be indicated as including x from Page y. The total mark should be in the position where the answer starts.
- 21.** The use of the following symbols/signs 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. Underlining of subject specific terminology, which is misused or incorrect e.g. encoding rather than encryption, information rather than data.
 - c. Underlining can also be used to highlight clearly incorrect statements or the use of a generalised phrase such as quicker, user friendly and so on.
 - d. 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.
 - e. 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.
 - f. The use of letters associated with ticks **may** be used to indicate different areas being marked in a question, particularly to indicate the different bullet points in an essay. **THIS WILL BE OUTLINED AT STANDARDISATION.**
- 22. NO** other symbols or comments should be used.
- 23.** Markers are responsible for checking
- a. The transposition of marks to the front sheet
 - 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.

Information: Nature, Role and Context/ Unit ICT 1

Examiners: the answers given in this 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.

1	<p><i>10.8 Malpractice and Crime</i></p> <p><i>In the context of ICT systems, explain what is meant by</i></p> <p><i>(a) malpractice;</i> <i>(b) crime.</i></p>	<p><i>(2 marks)</i> <i>(2 marks)</i></p>
	<p>(a) any 2 from:</p> <ul style="list-style-type: none"> • malpractice is bad practice (1) • is against the organisation's code of practice (1) • usually by an employee within the organisation (1) <p>(b) any 2 from:</p> <ul style="list-style-type: none"> • crime is concerned with illegal activities (1) • usually occurs from outside of the organisation (1) • actions that are unauthorised/without permission (1) 	

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2	<p>10.9 Legal Framework</p> <p><i>A company is holding your personal data and, according to data protection legislation, you are entitled to a copy of it.</i></p> <p>(a) <i>State two ways in which you can request a copy of your personal data.</i></p> <p>(b) <i>What must the company check before it issues the personal data?</i></p> <p>(c) <i>Why might you have to pay for a copy of your personal data?</i></p>	<p>(2 marks)</p> <p>(1 mark)</p> <p>(1 mark)</p>
	<p>(a) 2 x 1</p> <p>Any 2 from:</p> <ul style="list-style-type: none"> • in writing (to the organisation that holds the data) (1) • in person (to the organisation that holds the data) (1) • email/online/electronically (1) <p>Do not accept any answers which refer to requesting data from the Information Commissioner</p> <p>(b) 1 mark</p> <ul style="list-style-type: none"> • the person's identity (1) <p>(c) 1 mark</p> <ul style="list-style-type: none"> • to cover any administration cost (1) 	

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<p>3</p>	<p><i>10.2 Value and Importance of Information</i></p> <p>Information is a commodity and it can have a monetary value. <i>State three factors that could affect the value of information.</i></p>	<p>(3 marks)</p>
	<p>3x1 Any 3 from: Its: accuracy (1) potential use (1) particular intended use/relevance (1) Up to date (1)</p>	
<p>4</p>	<p><i>10.6 Role of Communication Systems</i></p> <p><i>A company requests that its customers contact it by e-mail rather than by telephone.</i></p> <p><i>Explain three benefits that the company could gain from its customers carrying out this request.</i></p>	<p>(6 marks)</p>
	<p>3 x (2,1,0) benefit + expansion from the company point of view</p> <p>Saving costs (1) + expansion (1) Saving time (1) + expansion (1) Customer satisfaction improved (1) + expansion (1) More convenient (1) + expansion (1)</p>	

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5	<p>10.1 Knowledge, Information and Data</p> <p><i>Three stages of an ICT system are input, processing and output.</i></p> <p><i>Describe, using an example of each one, what is meant by:</i></p> <p>(a) <i>input;</i></p> <p>(b) <i>processing;</i></p> <p>(c) <i>output.</i></p>	<p>(2 marks)</p> <p>(2 marks)</p> <p>(2 marks)</p>														
	<p><i>For each of (a), (b) and (c) (2,1,0) marks</i></p> <p>1 mark for description 1 mark for example</p> <p>(a) capturing/entering data (1) plus example (1)</p> <p>(b) converting/changing data into information (1) plus example (1)</p> <p>(c) action of getting information out of the system/information produced(1) plus example (1)</p>															
6	<p>10.5 The Social Impact of Information and Communication Technology 10.6 Role of Communication Systems</p> <p><i>Give four uses of ICT in education and state a benefit of each use.</i></p>	<p>(8 marks)</p>														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">4 x Use (1) Benefit (1) Benefit must be in context</td> </tr> <tr> <td style="text-align: center;">Use</td> <td style="text-align: center;">Benefit</td> </tr> <tr> <td>Online resources can be made available for students (1)</td> <td>can be accessed at any time/anywhere (1)</td> </tr> <tr> <td>Electronic whiteboards (1)</td> <td>can be used to improve delivery (1)</td> </tr> <tr> <td>The Internet can be used for research (1)</td> <td>providing a vast resource (1)</td> </tr> <tr> <td>Student records can be held on a database (1)</td> <td>saves storage space (1)</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	4 x Use (1) Benefit (1) Benefit must be in context		Use	Benefit	Online resources can be made available for students (1)	can be accessed at any time/anywhere (1)	Electronic whiteboards (1)	can be used to improve delivery (1)	The Internet can be used for research (1)	providing a vast resource (1)	Student records can be held on a database (1)	saves storage space (1)			
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7	<p><i>10.7 ICT and the Professional</i></p> <p><i>ICT professionals may be required to:</i></p> <ul style="list-style-type: none"> • <i>be willing to work flexible hours;</i> • <i>communicate well orally;</i> • <i>have good problem solving skills.</i> <p><i>Explain, giving examples, why ICT professionals should have each of these three characteristics.</i></p>	(6 marks)
	<p>1 mark for job title/description and 1 mark for why characteristic is required.</p> <p>Member of a help desk team (1) – role requires the ability to stick at problems and see them through after normal finishing time. may be 5pm the worker would be required to work until the problem was resolved (1)</p> <p>A systems analyst writing a system spec (1) to enable efficient and effective communication with users/ interviewing and questioning effectively to obtain the correct end user requirements (1)</p> <p>A programmer (1) – to determine different solutions to the problem / a user may not understand the solution so the professional would have to provide an alternative way to resolve the problem (1)</p>	

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8	<p><i>10.4 Capabilities and Limitations of Information and Communication Technology</i></p> <p><i>Companies use ICT systems because of the benefits that they provide.</i></p> <p><i>Giving examples, explain how the use of ICT systems can result in each of the following benefits to a company. Your example must be different in each case.</i></p> <p>(a) <i>reduction in costs</i> (b) <i>increased speed of operation</i> (c) <i>increased business opportunities</i></p>	<p>(2 marks) (2 marks) (2 marks)</p>				
	<p>3 x (2,1,0) Do not allow reduction in staff in less cost What and how E.g.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 50%; text-align: left;">What</th> <th style="width: 50%; text-align: left;">How</th> </tr> </thead> <tbody> <tr> <td>(a) companies can set up an online store/website to sell their goods (1)</td> <td>this means they require fewer retail outlets which will save on costs (1)</td> </tr> </tbody> </table> <p>Dependent marks</p>	What	How	(a) companies can set up an online store/website to sell their goods (1)	this means they require fewer retail outlets which will save on costs (1)	
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9	<p>10.8 Information Systems Malpractice and Crime</p> <p><i>A school wishes to allow its students access to the Internet for their course work. However, the Head Teacher is concerned that unrestricted access to the Internet might cause some problems.</i></p> <p><i>State four problems about which the Head Teacher might be concerned and, for each one, explain a measure that could be taken to try to prevent the problem</i></p>	<i>(8 marks)</i>
	<p>4x2 marks</p> <p>Viruses being downloaded (1), anti-virus software to stop this (1) Misuse by students using own email/ordering goods/etc (1) use of code of practice /disciplinary measures (1) Students seeing inappropriate material/pornography (1) use of filtering software or similar (1) Overuse by certain students restricting access for others (1) time limits (1) Plagiarism (1) + measure (1)</p>	
10	<p>10.9 The Legal Framework</p> <p><i>Software should be designed to protect the health of the user.</i></p> <p><i>State three potential health problems from which users should be protected and, for each one, give a software design feature that could be used, and explain how it might protect the health of the user.</i></p>	<i>(9 marks)</i>
	<p>3 x (3,2,1,0)</p> <p>Eye strain (1) good use of colour (1) not too bright for continuous use to prevent this (1) Stress (1) Good menu design (1) reduces navigation time (1) RSI (1) Short cut keys (1) less mouse movement (1)</p>	