



General Certificate of Education

Information and Communication Technology 5521

**ICT1R Information: Nature, Role and
Context**

Mark Scheme

2008 examination - June 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 streets” 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.
11. Responses in the mark scheme with a ‘/’ are either/or alternatives.

Specific marking guidelines

12. 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.
13. The only figures in the margin should be sub-totals for parts of questions and a final ringed total for a whole question.
14. Where questions are divided into parts a, b 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.
15. 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.

16. 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.
17. All zero values should be crossed through.
18. All blank spaces should be crossed through with a vertical line through the text space – not in the margin.
19. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.
20. All blank pages must be crossed through.
21. Where candidates have added extra 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 first section of the answer finishes.
22. 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. 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, faster, cheaper etc.
 - 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.
23. **NO** other symbols or comments should be used.
24. 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

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	Topic 10.2 – Value and Importance of Information Name three characteristics of information that give it value and importance.	(3 marks)
	Purpose of the question: Knowledge of basic concepts regarding <u>information</u> Any 3 x 1 Complete (1) Accurate / Correct (1) Relevant (1) Up to date (1) etc	

2	Topic 10.7 – Information and ICT Professionals For ICT professionals to work effectively within the ICT industry they require the following personal qualities: <ul style="list-style-type: none"> • good written communication skills • good listening skills • good problem solving skills. For each quality identify an ICT job rôle and explain why the quality is necessary for that rôle. The job rôles must be different in each case.	(6 marks)
	Purpose of the question: Knowledge of activities within IT industry Understanding of personal qualities required for them 1 mark for job role or title / activity 1 mark for understanding personal qualities required e.g. for good written communication skills systems analyst (1) writes documentation so the user can understand it (1) preparing requirements specification (1) so that the user can understand it (1)	

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3	<p>Topic 10.3 – Control of Information Topic 10.9 – Data Protection legislation</p> <p>An organisation is holding your personal data. According to the Data Protection Act (1998) you are entitled to a copy of it.</p> <p>(a) State two ways in which you can request a copy of your personal data.</p> <p>(b) What must the organisation check before it issues your personal data?</p> <p>(c) Why might you have to pay for a copy of your personal data?</p>	<p>(2 marks)</p> <p>(1 mark)</p> <p>(1 mark)</p>
	<p>(a) Purpose of the question: Knowledge of Legislation</p> <p>Any 2 x 1</p> <p>in writing (1) in person (1) email / on-line / electronically (1)</p> <p>etc</p> <p>(b) Purpose of the question: Understanding of the application of the legislation</p> <p>the person's identity (1) <i>credit a candidate's description of how the person's identity is checked</i></p> <p>(c) Purpose of the question: Understanding / Reasoning</p> <p>the administrative cost (1) (of putting the data into an understandable form for the data subject)</p>	

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4	<p>Topic 10.5 – The Social Impact of Information and Communication Technology</p> <p>A large company has many employees who telework. This has benefits and limitations for the company and for its employees.</p> <p>(a) State two benefits and two limitations to the company. (4 marks)</p> <p>(b) State one benefit and one limitation to an employee. (2 marks)</p> <p>(c) What effects can teleworking have on society as a whole? (4 marks)</p>	
	<p>(a) Purpose of the question: Understanding of why a company uses teleworking and problems of using it</p> <p>Any two benefits such as: Reduced: overheads of heating / lighting / canteen facilities (1) etc No need to just employ people from the locality/wider field to search for skills (1) Smaller offices required saving cost (1) Increase in productivity (1) etc</p> <p>Any two limitations such as: May not know how hard staff are working (1) More vulnerable to security breaches (1) etc</p> <p>(b) Purpose of the question: Understanding the implications of teleworking for employees</p> <p>Any one benefit such as: Higher job satisfaction (1) No travel costs (1) No time spent travelling (1) More flexible working arrangements (1) etc</p> <p>Any one limitation such as: Difficult to distinguish between work and home life (1) Disturbances from family (1) Feeling isolated (1) etc</p>	

	<p>(c) Purpose of the question: Knowledge of what it affects Understanding how it affects society as a whole</p> <p>Discussion of one or more issues is acceptable</p> <p>Environmental issues such as Air pollution Carbon footprints etc</p> <p>Leisure issues such as Increase in available leisure time More flexible leisure time etc</p> <p>Equal opportunities issues Greater opportunities for people with particular needs Rural/urban issues etc</p> <p>etc</p>	
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5	Topic 10.6 – Role of Communication Systems State five methods of communication using the Internet.	<i>(5 marks)</i>
	Purpose of the question: Knowledge of communication methods Any 5 x 1 E-mail Videoconferencing Teleconferencing / VOIP Forums Blogs Instant messaging Chat rooms RSS Podcasts etc NB communication does not have to be 2-way	

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6	<p>Topic 10.8 – Malpractice and Crime</p> <p>(a) Using examples, explain the difference between malpractice and crime. (4 marks)</p> <p>(b) Describe one method of reducing malpractice. (2 marks)</p> <p>(c) Describe one method of reducing crime. (2 marks)</p>	
	<p>(a) Purpose of the question: Understanding of malpractice and crime</p> <p>2 marks for explanation of difference such as:</p> <p style="padding-left: 40px;">Malpractice is against the company's regulations / bad practice (1) Crime is illegal (1)</p> <p>2 marks for examples such as:</p> <p style="padding-left: 40px;">e.g. of malpractice a user walking away leaving their workstation logged on (1)</p> <p style="padding-left: 40px;">e.g. of crime gaining unauthorised access to data (1)</p> <p>(b) Purpose of the question: Reasoning and application of knowledge</p> <p>1 mark for measure 1 mark for how the measure prevents malpractice</p> <p style="padding-left: 40px;">e.g. have an automatic logout if computer is left unused for 5 minutes (1) so unauthorised access is prevented (1)</p> <p>(c) Purpose of the question: Reasoning and application of knowledge</p> <p>1 mark for measure 1 mark for how the measure prevents crime</p> <p style="padding-left: 40px;">e.g. firewall (1) prevent unauthorised access to data <u>from external sources</u> (1)</p>	

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7	<p>Topic 10.9 – Health and Safety</p> <p>A member of staff at a call centre works at a computer workstation all day. To ensure the health of the member of staff, state with reasons:</p> <p>(a) two design features that the workstation used by the member of staff should have.</p> <p>(b) two design features that the software used by the member of staff should have.</p> <p>(c) two work practice procedures that the company could introduce.</p>	<p>(4 marks)</p> <p>(4 marks)</p> <p>(4 marks)</p>
	<p>In all the sections, all second marks are dependent on achieving the first.</p> <p>(a) Purpose of the question: Application of knowledge / reasoning about the workstation</p> <p>1 mark for feature 1 mark for reason</p> <p>e.g. ergonomic keyboard (1) to prevent RSI (1) adjustable (height) chair (1) to prevent back ache (1)</p> <p>(b) Purpose of the question: Application of knowledge / reasoning about the software</p> <p>1 mark for feature 1 mark for reason</p> <p>e.g. appropriate use of colour (1) to prevent eye strain (1) understandable error messages (1) to prevent novice users becoming stressed (1)</p> <p>(c) Purpose of the question: Application of knowledge / reasoning about the procedures</p> <p>1 mark for procedure 1 mark for reason</p> <p>e.g. (ensure) employees take regular breaks (1) to prevent RSI (1) (provide) regular eye tests (1) to prevent eye problems (1)</p>	

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8

Topic 10.1 – Data, Information and Knowledge

The figure below shows a gas bill for a customer. It has been produced as the output from data that has been input and processed.

The Gas Company UK	
Customer Number 10679	Date produced: 30/01/2008
<div style="text-align: center;"> Mr J F Collins 22 High Street New Town GF2 5HD </div>	
Last reading	43572
This reading	44675
Gas consumed	1103
Unit price (p)	25.5
Net total	£281.27
VAT @ 5%	£14.06
Total	£295.33

- (a) State **two** items of data that could be held in a customer record. (2 marks)
- (b) State **two** items of data that are entered every time a bill is produced. (2 marks)
- (c) Explain **one** process that has taken place in order to produce this bill. (3 marks)
- (d) The company plans to encourage its customers to view their bills on-line rather than being sent to them by post.
- (i) State **one** extra item of data that the company would need to collect. (1 mark)
- (ii) Describe **two** benefits to the company of making bills available on-line. (4 marks)

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	<p>(a) Purpose of the question: Knowledge, skills and understanding</p> <p>Any 2 from</p> <ul style="list-style-type: none"> customer name (1) customer address (1) customer number (1) postcode (1) last reading (1) <p>NB credit name and address if split into more than one field</p> <p>(b) Purpose of the question: Knowledge, skills and understanding</p> <p>Any 2 from</p> <ul style="list-style-type: none"> customer number (1) this reading (1) <p>Also accept any other non-calculated fields</p> <p>(c) Purpose of the question: Knowledge, skills and understanding</p> <p>One mark for identification of process One mark for description of process One mark for result of process e.g. this reading – last reading = amount of gas consumed</p> <p>(d)(i) Purpose of the question: Knowledge, skills and understanding</p> <p>Any 1 such as</p> <ul style="list-style-type: none"> customer's email address (1) whether or not they want to receive bills that way (1) password (1) <p>etc</p> <p>(d)(ii) Purpose of the question: Knowledge, skills and understanding</p> <p>1 mark per benefit 1 mark per expansion/explanation</p> <p>e.g.</p> <ul style="list-style-type: none"> saves time (1) company can automate the process (1) saves money (1) company does not have to pay postage on bills (1) 	
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