



General Certificate of Education

Information and Communication Technology 5521

ICT 1 Information: Nature, Role and Context

Mark Scheme

2006 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.

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:
- 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.
 - Underlining of subject specific terminology, which is misused or incorrect e.g. encoding rather than encryption, information rather than data.
 - 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.
 - 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.
 - 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.
 - 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
- The transposition of marks to the front sheet
 - That all work has been marked on each script
 - That all marks for individual questions are totalled correctly
 - That the script total is transferred to the box at the top right of the script.
 - 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.

Unit 1: 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	<p>10.6 Role of Communication Systems</p> <p><i>E-mail can be sent from a PC. Name two other devices that can be used to send e-mail</i></p>	2 marks
	<p>Any two from: Mobile phone PDAs And others</p>	2 marks

2	<p>10.1 Knowledge, Information and Data</p> <p><i>Every ICT task involves the input of data, which is processed and then information is output.</i></p> <p><i>Using an example of an ICT task with which you are familiar:</i></p> <p>(a) <i>state what the task is;</i> (b) <i>give one example of data that is input, stating how it is input;</i> (c) <i>describe one process needed to fulfil the task;</i> (d) <i>give one example of information output, stating how it is output.</i></p>	<p>1 mark 2 marks 2 marks 2 marks</p>
	<p>a) One mark for identification of a task For example: The task is to produce invoices for a book seller</p> <p>b) One mark for data, one mark for method of input (which may be the input device used) For example: Item id of book sold (1) is entered via a keyboard(1).</p> <p>c) One mark for simple description, 2 marks for more complex. For example: The quantity of books sold is multiplied by the price of the books (1) to give the total. (1)</p> <p>Calculate invoice total (This is a one mark answer)</p> <p>d) One mark for output example, one mark for how output (which may be the output device used or the method). For example: The invoice(1) is printed out(1)</p>	<p>1 mark 2 marks 2 marks 2 marks</p>

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3	<p>10.2 Value and Importance of Information</p> <p><i>A dental practice keeps records of all its patients in a database. Reminders are sent out to patients when they are due to have a check up. The practice has a policy of deleting from the database the details of those patients who have not made an appointment after they have been sent two consecutive reminders.</i></p> <p><i>Explain why the dental practice has this policy.</i></p>	3 marks
	<p>Any three from</p> <p>Reduce storage required (1) and/or business advantage/explanation (1)</p> <p>Speed issues (1) and/or business advantage/explanation (1)</p> <p>To comply with Data Protection Act (1)and/or business advantage/explanation (1)</p> <p>Other similar answers acceptable</p> <p>Do not accept other reasons for deleting the data –for example people may have moved house/died</p>	3 marks

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4	<p>10.5 Social Impact of ICT</p> <p><i>A large company has many employees who telework. This has benefits and limitations.</i></p> <p>(a) State two benefits and two limitations to the employer. (b) State one benefit and one limitation to the employee. (c) Describe one effect of teleworking on society as a whole.</p>	<p>4 marks 2 marks 2 marks</p>
	<p>a) Any two benefits from: Reduced overheads including heating, lighting, canteen facilities (1) No need to just employ people from the locality/wider field to search for skills (1) Smaller offices required saving on cost (1) Increase in productivity due to less distraction (1) Etc. Any two limitation from: Not so easy to determine how hard staff are working (1) More vulnerable to security breaches – viruses/hacking (1) Decrease in productivity due to less social interaction (1)</p> <p>Can only have one productivity mark – either as benefit or limitation not both</p> <p>b) Any one benefit from: Higher job satisfaction(1) No travel costs(1) More flexible working arrangements(1) More opportunities for the disabled to find work without travelling(1)</p> <p>Any one limitation from: Difficult to distinguish between work and home (1) Disturbances from family(1) Feeling isolated(1)</p> <p>c) Dependent marks (2,1,0) Saving on air pollution/reducing traffic congestion/could be more environmentally friendly(1) as fewer car journeys/fewer people travelling/reduction in city centre and transport usage(1) Increases the leisure industry(1) because of more flexible working hours/more flexible leisure time(1) Increase in equal opportunities/opportunities for the disabled(1)anyone can work from home/anywhere(1)</p>	<p>4 marks</p> <p>2 marks</p> <p>2 marks</p>

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5	<p>10.4 Capabilities and Limitations of Information and Communication Technology 10.9 The Legal Framework</p> <p><i>A company, which sells goods over the Internet, purchased a mailing list of e-mail addresses in the year 2004.</i></p> <p>(a) <i>Explain why it was of benefit to the company to purchase a list of e-mail addresses.</i></p> <p>(b) <i>Explain a limitation to the company of using this list.</i></p> <p>(c) <i>The company has data of a personal nature that they wish to sell.</i></p> <p>(i) <i>Whose permission must they first obtain?</i></p> <p>(ii) <i>Whom should they inform of their intentions?</i></p>	<p>2 marks</p> <p>2 marks</p> <p>1 mark</p> <p>1 mark</p>
	<p>a) Saves time or money (1) as company does not have to collect the data themselves (1)</p> <p>b) Data no longer up to date/email addresses don't necessarily correspond to people/people change e-mail address/ people change ISP/ people change e-mail provider (1) means people 'evaporate' so mailshot would be wasted /data no longer has value (1)</p> <p>c) i. The data subject (1) ii. The Information Commissioner (1)</p>	<p>2 marks</p> <p>2 marks</p> <p>1 mark</p> <p>1 mark</p>

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7	<p>10.8 Information Systems Malpractice and Crime</p> <p><i>An employee illegally copies a piece of software and takes it home. The employee has committed a crime.</i></p> <p>(a) Give two other examples of crime involving the use of ICT.</p> <p>(b) (i) Explain what is meant by malpractice in relation to ICT.</p> <p>(ii) Give two ICT examples of malpractice.</p>	<p>2 marks</p> <p>2 marks</p> <p>2 marks</p>
	<p>(a) For example</p> <ul style="list-style-type: none"> • gaining unauthorised access with intent to committing a further crime(1) • applying for loans via the internet using false identity (1) <p>(b) (i) Any 2 from: Malpractice is bad practice (1) concerned with actions within the organisation or company / own staff (1) not following procedures (1)</p> <p>(ii) 2x1</p> <ul style="list-style-type: none"> • using the e-mail system for personal use wasting company time (1) • walking away from the computer without logging off (1) <p><i>DO NOT ACCEPT NON ICT ANSWERS SUCH AS MEDICAL</i></p>	<p>2 marks</p> <p>2 marks</p> <p>2 marks</p>

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8	<p><i>10.6 Role of Communication Systems</i></p> <p><i>Examination boards publish past examination papers and mark schemes on the Internet.</i></p> <p><i>(a) State two benefits to an examination board of doing this.</i></p> <p><i>(b) State two benefits to a teacher of making use of this facility.</i></p>	<p><i>2 marks</i></p> <p><i>2 marks</i></p>
	<p>a) Board: 2x1</p> <ul style="list-style-type: none"> • Save printing costs • Require less staff to deal with requests for copies from schools • Save storage costs • Save posting costs <p>b) Teachers: 2x1</p> <ul style="list-style-type: none"> • More accessible/instantly available • Do not have to order • Easier to search for and find <p>The benefit is the consequence of having it in electronic format</p>	<p>2 marks</p> <p>2 marks</p>

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9	<p>10.9 The Legal Framework</p> <p><i>A company provides all new employees with an induction booklet that includes rules for working with ICT equipment and systems.</i></p> <p><i>(a) State four health and safety rules that might be included in the induction booklet.</i></p> <p><i>(b) The induction booklet also includes rules to protect the company's data. State two possible rules, and explain how each one could help to protect the data.</i></p>	<p>4 marks</p> <p>4 marks</p>
	<p>a) Any 4 x 1 marks</p> <p>Examples: You must not type without using the wrist rest provided (1) You must ensure that you use the screen filter provided (1) You must take regular breaks (1) You must adjust your chair to a suitable position (1) You must tilt your monitor to a suitable position (1)</p> <p>b) Any 2 x (2, 1, 0) marks One mark for stating rule WHAT the worker should do and one mark for reason for inclusion WHY they should do it i.e. how it helps to protect the company's data</p> <p>Examples: Do not disclose passwords to other people(1) prevent outsiders accessing data (1) Do not use damaged floppies (1) prevent damage to disk drives (1)</p>	<p>4 marks</p> <p>4 marks</p>

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10	<p><i>10.4 Capabilities and Limitations of Information and Communication Technology</i> <i>10.5 The Social Impact of Information and Communication Technology</i></p> <p><i>For each of the following areas, state one benefit and one limitation of the use of ICT. Your benefits and limitations must be different for each area.</i></p> <p style="margin-left: 40px;"><i>a) Education</i></p> <p style="margin-left: 40px;"><i>b) Leisure in the home</i></p> <p style="margin-left: 40px;"><i>c) Manufacturing</i></p> <p style="margin-left: 40px;"><i>d) Medicine</i></p> <p style="margin-left: 40px;"><i>e) The office.</i></p>	<p><i>2 marks</i></p> <p><i>2 marks</i></p> <p><i>2 marks</i></p> <p><i>2 marks</i></p> <p><i>2 marks</i></p>
	<p>For each of a) to e)</p> <p>For example a) Benefit – Internet provides a larger resource for research (1) Limitation – student does not know if the material is up to date(1)</p>	<p><i>5 x (1 +1)</i></p>