



**General Certificate of Education**

# **Information and Communication Technology 6521**

**ICT4      Information Systems within  
Organisations**

## **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.

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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 Systems within Organisations

**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.**

<b>1</b>	<p><b>Topic 13.8 – Project Management and Effective ICT teams</b></p> <p>An ICT team needs an effective leader.</p> <p>Give <b>four</b> other characteristics that an ICT team must have to ensure the successful completion of its work.</p>	<i>(4 marks)</i>
	<p><b>Looking for knowledge of good characteristics of ICT teams</b></p> <p>Any 4 x 1, such as</p> <ul style="list-style-type: none"> <li>• Appropriate allocation of tasks</li> <li>• Adherence to standards</li> <li>• Monitoring of progress / ability to meet deadlines</li> <li>• Monitoring of team budget</li> <li>• Control (over change)</li> <li>• Balance of team</li> <li>• Good internal communication skills</li> <li>• Good external communication skills</li> </ul>	

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2	<p><b>Topic 13.2 – Success or Failure of an IS</b></p> <p>The development of a new management information system for an organisation can succeed or fail depending on various factors.</p> <p>Describe <b>three</b> factors that would be important in making a success of the development, stating why they are important.</p>	(6 marks)
	<p><b>Looking for knowledge and understanding about what makes a successful development</b></p> <p>1 for factor (F), 1 for importance (I) – to max 3 x (2,1,0)</p> <p>Examples are –</p> <ul style="list-style-type: none"> <li>• adequate analysis/other phase (F) as the project needs to have accurate requirements/ specification/ thorough testing to prove it works (I)</li> <li>• emphasis info needs of users/ good management involvement / good user involvement (F) important to ensure the users take ownership of the system (I)</li> <li>• good management knowledge of ICT and its capabilities (F), important so that impossible demands are not made (I)</li> <li>• use of development standards (F), important for future maintenance/ makes sure nothing gets missed out (I)</li> <li>• complete technical and user documentation (F), makes sure the system can be maintained/ that users have support that they can use independently (I)</li> <li>• consideration of putting smooth changeover methods/procedures in place (F) important so that data is kept safe/ a smooth transition to the new system is enabled (I)</li> <li>• consideration of having staff prepared/ trained ready for introduction of new IS (F) important so the business can carry on running without problems (I)</li> <li>• consideration for post-implementation maintenance (F) important so that users know how to report problems/suggest new features etc (I)</li> <li>• end user testing with live data (f) important that the system works in a real situation / to identify any problems during development(I)</li> </ul>	

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3	<p><b>Topic 13.3 – Corporate information systems strategy</b></p> <p>Discuss how the following factors might influence choices made by management when writing a corporate information systems strategy:</p> <ul style="list-style-type: none"> <li>• organisational structure</li> <li>• legal and audit requirements</li> <li>• hardware and software</li> <li>• behavioural factors.</li> </ul>	(8 marks)
	<p><b>Looking for understanding of how the given factors influence choices made by management</b></p> <p>This should be written prose-style, so no hard and fast rules about marking to the 4 points.</p> <p>Looking for a discussion, not a list of items, but the discussion could cover things like –</p> <ul style="list-style-type: none"> <li>• If we have a tall, hierarchical org structure with many layers, then we need to consider what mechanisms we need in place to ensure information gets disseminated at the right pace (1 mark against the first factor) – extending with an example gets a second mark</li> <li>• If we are a financial organisation, then we will have to abide by specific legislation (1) and make sure our data is available for external audit (1)</li> <li>• Do we need to be compatible with suppliers/customers in software terms? If so, that influences our choices. (1)</li> <li>• How are we going to acquire our hardware and software - purchase, lease etc (1)</li> <li>• How do we represent ourselves to the world? Environmentally friendly, so green issues will influence some choices (1). High-tech, so our hardware needs continually updating? (1)</li> <li>• What kind of organisation are we? Big corporation, faceless employees? Or family business? Or relaxed approach?</li> </ul>	

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<p><b>4</b></p>	<p><b>Topic 13.9 – Information and the Professional</b></p> <p>All students are asked to sign a school's ICT Code of Practice at the start of every academic year.</p> <p>(a) Why does the school have an ICT Code of Practice for its students?</p> <p>(b) Give <b>four</b> topics that might be in the school's ICT Code of Practice for its students, stating why they might be included.</p> <p>(c) Why might the school's ICT Code of Practice for its employees be different from the one for its students?</p>	<p>(2 marks)</p> <p>(8 marks)</p> <p>(3 marks)</p>
	<p><b>(a) Looking for understanding of reasons for having a COP</b></p> <p>any 2 sensible points, such as</p> <ul style="list-style-type: none"> <li>• May refer to the responsibilities of students when using school ICT (1)</li> <li>• It has procedures and rules over and above legal requirements (1)</li> <li>• it sets acceptable boundaries for student use of the school ICT (1),</li> <li>• so that disciplinary action can be taken (1)</li> </ul> <p><b>(b) Looking for knowledge of normal CP topic and understanding of why they are included</b></p> <p>1 for topic (T), 1 for why include (I) to max 4 x (2,1,0) – topics, such as -</p> <ul style="list-style-type: none"> <li>• use of software (T), to make sure they know that they are only allowed to use school software and not bring in their own or download (I)</li> <li>• use of hardware (T), could have restrictions on use of colour printer (I)</li> <li>• use of the internet (T), so students are aware of banned sites etc (I)</li> <li>• use of school network (T), emphasise use for study, not games/messaging etc (I)</li> <li>• authorisation paths/levels (T), what allowed/not allowed to do/see (I)</li> <li>• security (T), workstation security, logging off, locking keyboards etc (I)</li> <li>• penalties for misdemeanours/disciplinary procedures* (T) so they know the consequences of actions (I)</li> <li>• use of data (T), should only access what is theirs or in common areas (I)</li> </ul> <p><i>* do not give both here and in part (a)</i></p> <p><b>(c) Looking for understanding</b></p> <p>any 3 sensible points, such as</p> <ul style="list-style-type: none"> <li>• may have different areas of network available</li> <li>• employees may be allowed to see student records/exams/grades etc</li> <li>• disciplinary procedures might be different</li> <li>• there may be different rules for use of software/hardware/internet etc</li> </ul>	



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5	<p><b>Topic 13.5 – Management of change</b></p> <p>When a new ICT system is introduced into an organisation, the changes that occur must be managed. Employees may be affected as their jobs might change.</p> <p>Give <b>four</b> examples of what may change, and explain how each change might affect the employees.</p>	(8 marks)
	<p><b>Looking for knowledge of change factors and understanding of the effect</b></p> <p>1 for what may change (C) 1 for How affect (H) to max 4 x (2,1,0)</p> <ul style="list-style-type: none"> <li>• Employee patterns (C), may mean they have to work shifts/weekends (H)</li> <li>• Employee Conditions (C), may mean they are working in a different department, away from friends (H)</li> <li>• Internal procedures (C), may mean they are interacting with different people than before/timescales for the job they do has changed (H)</li> <li>• Skill-set changed (C), may mean that they need to go on training courses (H)</li> <li>• Organisational structure (C), may mean they need to report to different managers / move departments</li> </ul>	

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6	<p><b>Topic 13.4 – Data</b></p> <p>A market research organisation collects data for particular purposes. One purpose is to find out people's shopping habits and this data is collected from around the country in the form of questionnaires.</p> <p>(a) For each of the following styles of question, describe a suitable method of data capture, explaining why you have chosen this method.</p> <p>(i) Questions that offer limited choice through the use of tick boxes or a mark in a pre-defined space. (3 marks)</p> <p>(ii) Questions that allow the respondent to give a description that the interviewer writes down on the form. (3 marks)</p> <p>(b) Describe <b>two</b> methods of ensuring that data from the forms are entered accurately into the data processing system. (4 marks)</p>	
	<p><b>(a) Looking for application of knowledge and understanding</b></p> <p>1 for method, 1 for description, 1 for suitability</p> <p>Any sensible data capture method, such as</p> <p>(i) Optical Mark recognition which scans the form in (1), looking for marks in pre-defined places and codes what it finds (1), this method is suitable as it can quickly scan many forms per hour and enter the data faster than using a manual method (1) <b>Max 3 marks</b></p> <p>(ii) Transcribing/typing the text using a keyboard (1), with the form next to the inputter (1). This is suitable as a human may be able to interpret bad handwriting better than a machine (1). <b>Max 3 marks</b></p> <p><b>(b) Looking for understanding of verification</b></p> <p>1 for method, 1 for description/expansion/example in context to 2 x (2,1,0)</p> <ul style="list-style-type: none"> <li>• Double-entry same input method verification + description</li> <li>• Double-entry using two different input methods verification + description</li> <li>• Visual verification + description</li> </ul> <p><b>(Not Validation)</b></p>	

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7	<p><b>Topic 13.7 – Training</b></p> <p>A school has introduced a computerised student attendance and tracking system. Classroom teachers will be entering attendance data for every lesson, as well as scores and grades for students' work. Heads of department will be using attendance and performance data to identify problems and to take action. Senior managers, such as the Deputy Head, will be looking at results and trends to help their decision-making.</p> <p>All these staff will need training on the new system.</p> <p>(a) For each of the following staff, suggest the most suitable method of training, describe what it would entail and explain why your choice is the most suitable:</p> <ul style="list-style-type: none"> <li>(i) Classroom teachers</li> <li>(ii) Heads of department</li> <li>(iii) The Deputy Head.</li> </ul> <p>(b) After training has been carried out, there will be a need for continued support to be provided for users of the attendance and tracking system. Support also needs to be provided for the users, including students, of other ICT systems within the school.</p> <p>Select and justify an appropriate user support system for the school.</p>	<p>(3 marks)</p> <p>(3 marks)</p> <p>(3 marks)</p> <p>(12 marks)</p>
	<p><b>(a) Looking for application of knowledge and understanding</b></p> <p>1 for method (M), 1 for description (E) 1 for Suitability (for that role)(S) These are examples only, credit any valid method. Question asks for <i>MOST</i> suitable.</p> <p>(i) classroom teacher – group training sessions in the school(M), where each has their own computer and are led through the functions they will need (E) There may have to be a few sessions to make sure all teachers are trained before the system is put in place for use. It's most suitable as many teachers can be trained at once (S), and they can help each other out on exercises.</p> <p>(ii) Heads of department – training sessions at the premises of the developers (M) where tutors from many schools can come together to learn the specialist functions and exchange ideas (E). It's most suitable as their needs may not be as time-critical as those of classroom teachers and will not clog up IT teaching rooms (S)</p> <p>(iii) The deputy head – one-to-one training sessions (M) with a consultant from the development firm (E) which can be done at times most suitable for the deputy head to find out what information can be extracted from the system. (S)</p>	

	<p><b>(b) Looking for application of knowledge and understanding</b></p> <p>This is an opportunity for discussion of various user support options with descriptions and reasoned arguments about which types of user they would be suitable for. It may be presented discursively or itemised, matching people/groups of people with different options.</p> <p>Give 1 mark each to</p> <ul style="list-style-type: none"><li>• a <i>suitable</i> support option named,</li><li>• a <i>good</i> description of the option,</li><li>• for identifying <i>who</i> would benefit from that type of support</li><li>• for saying <i>why</i>.</li></ul> <p>The candidate may give alternatives for particular groups/people – allow this, but there must be some description AND justification involved to get full marks</p> <p><b>Maximum of 4 support options</b></p>	
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8	<p><b>Topic 13.6 – Legislation</b></p> <p>Organisations that use ICT systems have to ensure that they comply with current relevant legislation.</p> <p>Discuss the implications for an organisation of complying with such legislation, showing how these may affect the operational procedures used by the organisation.</p> <p>Your discussion should cover:</p> <ul style="list-style-type: none"> <li>• data protection legislation</li> <li>• software copyright and licensing legislation</li> <li>• computer misuse legislation</li> <li>• health and safety legislation.</li> </ul> <p><i>The quality of written communication will be assessed in your answer.</i></p>	(20 marks)
	<p>Continuous prose is expected for this answer. A mark is awarded for a discussion of a topic, not just the words shown below. Expansion or use of relevant example may get a second mark for the same topic.  <b>To a maximum content mark of 16.</b></p> <p>Code -</p> <ul style="list-style-type: none"> <li>• general as <b>G</b></li> <li>• dpa as <b>D</b></li> <li>• software copyright as <b>S</b></li> <li>• computer misuse as <b>C</b></li> <li>• health and safety as <b>H</b></li> </ul> <p><b>(G)</b> Max 4 marks – Allow up to two marks for a good general introduction that acknowledges that having to conform to legislation poses restrictions on an organisation. (Beware: no marks for regurgitation of question as stated.) Likewise, a good conclusion that makes a valid (non-repetitive) point can gain up to two marks.</p> <p><b>(D, S, C, H)</b> Under each of the four headings, allow up to 6 marks – allows for depth of knowledge as well as breadth. Points made are worth 1, plus an expansion or example mark, if deserved, for:</p> <ul style="list-style-type: none"> <li>• Description of the legislation (e.g. what it covers); expansion mark here must have 1 or more of the ‘contents’ e.g. “DPA is about protection of personal data (1), there are eight principles – for instance Personal Data must be gathered fairly and lawfully (1)”</li> <li>• Reasoned implication (e.g. extra security); only accept cost implications if explained properly</li> <li>• Impact on procedures (e.g. having a code of practice to set out rules, appointing a health and safety officer, installing monitoring software )</li> </ul>	

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4 marks	The candidate has expressed complex ideas clearly and fluently. Sentences and paragraphs follow on from one another smoothly and logically. Arguments will be consistently relevant and well structured. There will be few, if any, errors of grammar, punctuation and spelling.
3 marks	The candidate has expressed moderately complex ideas clearly and reasonably fluently through well-linked sentences and paragraphs. Arguments will be generally relevant and well structured. There may be occasional errors of grammar, punctuation and spelling.
2 marks	The candidate has expressed straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Arguments may sometimes stray from the point or be weakly presented. There may be some errors of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas.
1 mark	The candidate has expressed simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Arguments may be of doubtful relevance or obscurely presented. Errors in grammar, punctuation and spelling may be noticeable and intrusive, suggesting weaknesses in these areas