



**General Certificate of Education
June 2010**

**Information and
Communication Technology**

INFO3

The Use of ICT in the Digital World

Unit 3

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 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. 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 banded marking is used, 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.

- 1** *Globemob's consultants recommended that emerging ICT technology is one factor that should be taken into account when developing a future ICT strategy.*

Explain other factors that Globemob should take into account when developing an ICT strategy.

(6 marks)

Guidance for examiners on how to mark this question

Up to 3 marks for any factor. If a simple list of factors is provided, the maximum number of marks is 4.

Example answer

Business goals (1) should be taken into account when developing an ICT strategy as all strategic ICT activities must be business driven rather than technology-driven. (1)

Legacy systems (1) should also be considered, as the ICT strategy may be constrained by existing business-critical legacy systems (1) that would be inoperable if new hardware or software were used. (1)

Existing and new legislation (1) will also need to be considered.

- 2** *Globemob's consultants suggested that the failure of previous ICT projects could have been avoided if management and end users had been involved in the development of the solutions.*

Discuss the factors that can contribute to the development of a successful ICT solution.

(12 marks)

Guidance for examiners on how to mark this question

One mark for identifying a factor and further marks for an extended answer, description and examples. Give marks for breadth and depth. Maximum 12 marks.

For maximum marks more than 1 factor is required.

Example answer

One factor that contributes to the success of an ICT solution is control of the development is control of the project plan. (1) A project plan should be agreed with user staff and development staff (1), be monitored regularly (1) with corrective action taken where appropriate. (1)

A second factor is a full and complete analysis. (1) A formal analysis is required to meet business requirements (1) and this needs to be signed-off by the client (1) before development commences.

A third factor is use of professional standards. (1) This will ensure that the documentation necessary for future maintenance (1) is available.

A fourth factor is user acceptance testing (1) that should be carried out with operational data and signed off by the client (1).

Finally, effective communication at all levels is important (1).

3(a) *Globemob's consultants suggested that external providers be used for all ICT services.*

Describe the ICT services that could be provided externally and explain the reasons why Ms Broussard might have concerns about using external providers rather than keeping the provision in-house.

(9 marks)

Guidance for examiners on how to mark this question

This is a depth/breadth question and marks should be given accordingly. Must be more than one service and more than one concern for maximum marks.

Example answer

External ICT providers could include:

Outsourcing (1) where all or parts of an ICT service become the responsibility of a third party. (1)
This could be an offshore operation of computer services, (1) or personalised bulk printing carried out off-site, (1) say for payroll or customer billing, (1) using customer information provided by Globemob. (1)

Ms Broussard may be concerned about Globemob losing some control of the business (1), as external ICT providers may not give the work the required priority or care (1). She could also be concerned that costs may be higher compared to using in-house provision (1).

3(b) *One method of providing external ICT services is through outsourcing.*

Describe what is meant by outsourcing.

(4 marks)

Guidance for examiners on how to mark this question

Give credit for any valid point.

Example answer

Outsourcing involves the transfer of responsibility for a particular function from Globemob (1) to a third party company. (1) For example, Globemob's network management (1) could be outsourced with agreed service levels and response times. (1)

- 4** *The consultants considered Globemob's Information Security Policy to be inadequate for current and future operations.*

With reference to Globemob's Information Security Policy, identify those areas which you consider to be inadequate, making suggestions for improvements that should be made.

(16 marks)

Guidance for examiners on how to mark this question

There will be many different answers. What we are looking for are comments that relate directly to security policy. It is a depth/breadth question, so two or three areas of inadequacy could gain full marks if sufficient explanations or examples are given. Alternatively, up to four/five areas of inadequacy, less well described, may gain the required 16 marks.

Example answer

There appear to be no restrictions on staff downloading files/programs from the internet (1). This should be included, as downloaded files could contain viruses (1) and downloaded programs could result in Globemob breaching legislation (1). A check for downloading could be included within the "monitoring" section (1) or downloading could be prevented using appropriate control software (1).

Use of staff's own software (1) or hardware (1) are not mentioned in the security policy. There is no mention of Globemob's staff being prevented from installing their own software. This must be included, as unauthorised installation and operation of software would consume computing resources (1) and may affect the operation of Globemob's PCs (1). Similarly, staff must not install their own hardware, such as memory devices (1), as these could be used to record customer information (1), thereby breaching the DPA (1).

Physical security. There is no mention of staff responsibilities for physical security (1). For example, advice could have been included against writing and attaching passwords to monitors (1) or divulging passwords to colleagues (1). Other physical security issues that could have been mentioned include taking care and attention of laptops when travelling on the train or in the car (1).

5(a) A national supermarket chain employs staff at strategic, tactical and operational levels. Examples of tasks that staff at the different levels undertake might include:

- Strategic – determining the location of a new store.
- Tactical – managing changes in customer demand for bakery products.
- Operational – restocking shelves.

Complete the table below by identifying the key characteristics of information required for strategic, tactical and operational tasks.

| | <i>Level of detail in the information required</i> | <i>Time-span of decision making</i> | <i>Purpose for which information is required</i> |
|--------------------|--|-------------------------------------|--|
| <i>Strategic</i> | | | |
| <i>Tactical</i> | | | |
| <i>Operational</i> | | | |

(9 marks)

Guidance for examiners on how to mark this question

Look for short answers in each cell.

Example answer

| | Level of detail in the information required | Time-span of decision making | Purpose for which information is required |
|--------------------|--|---|---|
| Strategic | Summarised information such as graphs/charts (1). | Long term (months and years) (1). | Decision making (overall company) (1). |
| Tactical | Detail relevant to departmental manager (1). | Medium term (months or weeks) (1). | Decision making (within a store or department) (1). |
| Operational | Detail necessary to undertake day to day operations (1). | Short term (instant or hours/days) (1). | To carry out their task (1). |

5(b) Name and justify an appropriate training method for each of the following.
The training method must be different in each case.

- | | | |
|-------|-------------------|-----------|
| (i) | Strategic staff | (2 marks) |
| (ii) | Tactical staff | (2 marks) |
| (iii) | Operational staff | (2 marks) |

Guidance for examiners on how to mark this question

1 mark for type of training
1 mark for justification in context

Example answer

Strategic staff, such as a Company Director, could use one-to-one training (1). This is because they may not be required to learn all aspects of a system but, instead, may require the specialised training necessary to extract summary reports (1).

Tactical staff, such as the bakery managers, could use training manuals (1). These would be suitable because staff could study only those parts necessary for their function and could refer back to the training manuals when required (1).

Operational staff, such as till operators, could be trained using on-the-job training. (1) They could learn whilst working and so no work would be missed. (1)

6 *A large organisation is about to develop a new Sales Order and Stock Control System. The Chief Executive has past experience of systems that have not operated reliably due to inadequate testing and has requested further information about the testing of large ICT systems.*

Write a brief report for the Chief Executive to describe the testing necessary to ensure the reliable operation of a large ICT system. As your report is for a person who is not an ICT specialist, you must include an explanation of any technical terms used.

(18 marks)

Guidance for examiners on how to mark this question

Continuous prose needed for this answer

| | |
|--|--|
| <p>Low mark range 0-6 marks</p> | <p>Candidate demonstrates a limited knowledge of testing or concentrates on testing suitable for small scale software development.</p> |
| <p>Medium mark range 7-12 marks</p> | <p>Candidate demonstrates some knowledge and understanding of testing. Reference may be made to the scenario/large ICT systems with some attempt at showing understanding of or explaining technical terms used.</p> |
| <p>High mark range 13-18 marks</p> | <p>Candidate demonstrates good knowledge and understanding of testing and has applied this to the scenario/large ICT systems and has explained/shown understanding of technical terms used.</p> |

- 7** *Discuss how developments in the technologies used in entertainment and social interaction are now influencing the way in which organisations are run. In this question you will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.*

(20 marks)

Guidance for examiners on how to mark this question

Continuous prose is expected for this answer. “Discuss” is the command word, so each point made must be full, not just a single word/phrase or bullet pointed list.

Low mark range

Candidate **identifies** some developments in technology. Candidate typically uses a form and style of writing that is barely appropriate for its purpose. 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.

0 – 5 marks**Medium mark range**

Candidate **describes** developments in technology and how they influence how organisations are run. Candidate uses a form and style of writing which is sometimes appropriate for its purpose but with many deficiencies. Candidate has expressed straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well-connected. Information or arguments may sometimes stray from the point or may be weakly presented. There may be some errors of spelling, punctuation and grammar but not such as to cause problems in the reader’s understanding and not such as to suggest a weakness in these areas. Text is legible.

6 – 10 marks**Good mark range**

Candidate **explains** relevant technology developments in entertainment or social interaction and how they influence how organisations are run. Candidate has in the main used a form and style of writing appropriate for its purpose, with only occasional lapses. 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.

11 – 15 marks**High mark range**

Candidate has **analysed** the technology developments in entertainment and social interaction and how they are influencing the way in which organisations are run. Meaning is clear. 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. Specialist vocabulary has been used appropriately. There are few, if any, errors of spelling, punctuation and grammar. Text is legible.

16 – 20 marks