



General Certificate of Education

Information and Communication Technology 2520

INFO2 Living in the Digital World

Mark Scheme

2009 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. 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. The use of letters associated with ticks **may** be used to indicate different areas being marked in a question. **THIS WILL BE OUTLINED DURING THE STANDARDISATION PROCESS.**
- 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	What characteristics of users should be considered when designing an ICT interface?	4 marks
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Guidance for examiners on how to mark this question

1 mark for either of the following points:

- Valid characteristic
- Why they need to consider the characteristic

Max 4

If only 1 characteristic max 2

Mark Scheme examples

Age (1) of the user should be considered when designing an ICT interface as older users may not be able to react as quickly (1).

Experience (1) should be considered and physical characteristics (1).

2	Explain what ICT can provide.	6 marks
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Guidance for examiners on how to mark this question

Marks for

- 'Provisions' of ICT
- Explanation of a 'provision'
- Examples

Max 4 if no explanation attempted

Mark Scheme examples

ICT can provide fast repetitive processing (1). ICT can provide enormous secondary storage (1) because of the availability of very high capacity disk drives (1) able to store a Terabyte//1000 Gigabytes of data (1). ICT can provide improved methods of displaying data/ presentation software (1) for example by using a data projector (1).

Max 6

3	Explain, using examples, the need for standards when transferring data.	4 marks
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Guidance for examiners on how to mark this question

- Identification of a need/needs
- Good explanation of need
- Examples of standard(s)/devices that meet the need.

Mark Scheme examples

Standards are needed so that many different types of device, for example different cameras (1) or mobile phones (1), can be connected to any computer system (1). A standard way of connecting would be to use the Universal Serial Bus (USB) (1).

4	Explain, with the aid of examples, the different forms that data can take.	6 marks
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Guidance for examiners on how to mark this question

- Data forms (1)
- Explanation (1) Example (1)

Max 3 for forms

Mark Scheme examples

Data must be numeric (1) to allow calculations to be performed (1) e.g. the sum of two values is 15 (1).

Data can take the form of text (1) e.g. a file containing a word processed letter (1).

Data can be in the form of moving images (1).

Max 6

5(a)	<p>Many organisations such as retailers are expanding their e-commerce operations and need ICT systems that are available 24 hours a day every day of the year. It is important for their customers that the ICT systems are kept working.</p> <p>E-commerce operations have specific needs for the backup and recovery of their systems.</p> <p>Describe how these needs could be met.</p>	10 marks
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Guidance for examiners on how to mark this question

- Identification of items that need to be considered in backup and/or recovery (1 each)
- Explanation in context of **e-commerce** (1)

Max 10

Mark Scheme examples

Location of the backup should be considered (1).

Who should be responsible for the back up (1).

Type of backup (1).

A removable hard drive could be used as the medium for the backup (1).

Use of RAID spreads the data over several disks (1) and allows for automatic recovery if a disk fails this supports continuity of service (1).

Large companies may have complete duplicate computer systems in different locations (1) and if one system fails then processing is carried on by the other (1).

Consider how often the data should be backed up (1) for example, every hour which would minimise disruption to the e-commerce service (1).

5(b)	Discuss the types of processing that e-commerce organisations could use.	6 marks
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Guidance for examiners on how to mark this question

- Mode of processing (1)
- Example of use (1)
- Justification of mode for that use (1)

Max 6

Mark Scheme examples

Transaction processing (1) – customer placing an order over the Internet reduces the available stock (1) so the next customer sees the correct stock level (1).

Batch processing (1) – could be used to generate the address labels at the end of the day (1).

Interactive processing (1).

5(c)	What are the implications of e-commerce for society?	8 marks
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Guidance for examiners on how to mark this question

Implication on society (1 mark for simple description/explanation, 2 marks for detailed)

Mark Scheme examples

Change in employment patterns (1) businesses need fewer traditional shop-floor staff because no retail premises required (1) but need ICT trained staff to support the e-commerce (1).

Less pollution /smaller carbon footprint (1) fewer journeys made as customers don't need to visit shop(s) (1).

Society has to support treatment of more gambling addicts (1) on-line gambling available 24/7 (1).

Lack of social interaction (1).

Max 8

6(a)	In relation to the use of ICT systems, and using an example for each, describe what is meant by malpractice and crime.	4 marks
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Guidance for examiners on how to mark this question

Description of malpractice (1) example of malpractice (1) description of crime (1) example of crime (1)

Mark Scheme examples

Malpractice – not following an organisation’s code of practice (1)

example – a user walking away leaving their workstation logged on which may then be used by an unauthorised colleague (1).

Crime is an illegal act (1)

example – gaining unauthorised access to a bank’s computer system with the intent to commit fraud (1).

Max 4

6(b)	<p>Measures can be taken to protect ICT systems. Explain what measures you would take to protect an ICT system and why you would take them. Your explanation should include:</p> <ul style="list-style-type: none"> • Hardware measures • Software measures • Procedures 	12 marks
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Guidance for examiners on how to mark this question

What measure (1) why taken (1) may have more than one reason.
 For full marks must have at least one measure of each type.
 If only two types of measures then max 11
 If only one type of measure max 10

Mark Scheme examples

Use of a password to login (1) to prevent unauthorised access (1).
 The system ensures that the password is strong (1) so it cannot be found by using a password guessing program (1).

Anti-spyware (1) and anti-virus software (1) to avoid corruption of data (1).

Use of a firewall (1) to prevent hackers accessing the system (1).

Using physical security, e.g. bolting laptops down (1) so they cannot be stolen (1).

Use of removable hard drive to ensure that data is removed from the ICT system when not required (1).

Max 12

7	<p>Social Networking sites are used by many students. Discuss the possible effects of using these sites on individuals and society.</p> <p>Your discussion should include the following:</p> <ul style="list-style-type: none"> • Use of the Internet for socialising • The protection of personal data • Ethical factors • Cultural Factors 	20 marks
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Guidance for examiners on how to mark this question

Low mark range

Candidate refers to at least 1 factor. Text is barely legible. Errors in spelling, punctuation and grammar, may be noticeable and intrusive to understanding, suggesting weaknesses in these areas. The candidate has used a form and style of writing which is barely appropriate for its purpose. The candidate has expressed simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Information or arguments may of doubtful relevance or be obscurely presented.

0-5 marks

Medium mark range

Candidate refers to at least 2 factors and shows that they have reasonable understanding of these factors. Text is legible. 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. The candidate has used a form and style of writing which is sometimes appropriate for its purpose with many deficiencies. The 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 information be weakly presented.

6-10 marks

Good mark range

Candidate refers to at least 3 factors and shows that they have good understanding of these factors. Text is legible. There may be occasional errors of spelling, punctuation and grammar. Meaning is clear. The candidate has in the main used a form and style of writing appropriate for its purpose with occasional lapses. The 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.

11-15 marks

High mark range

Candidate refers to all factors and shows that they fully understand these. Text is legible. There are few if any errors of spelling, punctuation and grammar. Meaning is clear. The 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.

16-20 marks