AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Education

Information and Communication Technology 2520

INFO2 Living in the Digital World

Mark Scheme

2010 examination – January 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. 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 candidates' answers are assessed for QWC, 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   *The use of ICT can be influenced by economic factors.*

   *Give **two** other factors that can influence the use of ICT.*   *(2 marks)*

Guidance for examiners on how to mark this question

Two factors that affect the use of ICT
e.g. cultural, environmental, ethical, legal and social
NOT economic or financial

Example answer

Two factors that affect the use of ICT are cultural factors (1) and social factors (1).

2(a) *Define the term information.* *(2 marks)*

Guidance for examiners on how to mark this question

Definition of the term information
Examples are OK as long as they clearly define the term information

Example answer

Information is processed data (1) which gives it context or meaning (1)

2(b) *State **three** factors that affect the quality of information.* *(3 marks)*

Guidance for examiners on how to mark this question

Three factors which affect the quality of information
Allow data or information

Example answer

The quality of information can be affected by:
- How up-to-date the information is
- How accurate the information is
- How relevant the information is

3(a) *Before this data is entered into a data processing system the customer's
gender is coded as M or F and their age group is coded as 1, 2, 3 or 4.*

Why is this data coded before it is entered? *(3 marks)*

Guidance for examiners on how to mark this question

Three marks for identifying the reasons why data is coded
If a good expansion point is made then full marks can be awarded with 2 reasons

Note that another reason would be so that it can be entered more quickly

Example answer

Data is coded before it is entered into an ICT system so that it can be validated more easily (1).
When it is stored it takes up less space (1) and this means a lot more forms can be stored on the
same disk (1).

3(b) *When the coded data is entered into a data processing system it is encoded.*

Why does the data need to be encoded? *(1 mark)*

Guidance for examiners on how to mark this question

One mark for identifying the reason why data is encoded

Example answer

Data is encoded when it is entered to convert it into a form that the system/computer understands
(so that it can be processed effectively) (1)

4 (a) *Give **three** benefits of using computer networks.* *(3 marks)*

Guidance for examiners on how to mark this question

Three benefits of using computer networks; one mark each.
Peripherals and storage space are both examples of hardware.
1 mark for sharing of hardware, 1 mark for sharing of software.
Software may include files, programs and data.

Example answer

One benefit of using a computer network is that backup of data is managed centrally (1). Another benefit is that network users are able to share hardware resources (1). A third benefit is that users can communicate easily with each other using email (1).

4 (b) *Intranets and extranets are networks. Describe their characteristics.* *(4 marks)*

Guidance for examiners on how to mark this question

A description of the similarities and differences between extranets and intranets up to a maximum of four marks
Internal intranet must imply restricted access

Example answer

An intranet and an extranet both use the same protocols as the Internet (1). An intranet can only be accessed by the employees/members of an organisation (1). An extranet is part of an intranet that has been made accessible to people external to an organisation (1) for example the parents of pupils at a school (1).

5 *Loss of data because of a system failure on a home computer network can be a serious problem. Discuss what factors you would need to consider when backing up data stored on your home computer network in order to prevent such data loss.* *(8 marks)*

Guidance for examiners on how to mark this question

Identification of the factors that need to be considered and an expansion.
Need at least two factors and full marks could be gained if detailed expansions are given for each of two factors.

Max 4 factors each with 1, 2 or 3 expansion points
(Remember context is home network so answers must be in that context)

Example answer

The medium that will be used to backup the data must be considered (1) As this is a home network a DVD-R may be suitable (1).

The frequency of the backup must be considered (1). This will depend on how often the data changes and for a home network once a may week might be sufficient (1).

The backup media will need to be organised and suitably labelled (1). They will also need to be stored safely perhaps in a locked drawer in another room away from the main system (1).

The type of backup will need to be considered (1). For a home network a full backup may the easiest to carry out (1)

6 (a) *The Smith family have decided to have a family website. Mr. Smith will use specialist design software to produce the website. This software has a Graphical User Interface (GUI).*

Explain what features of a GUI would make it suitable for Mr. Smith   *(5 marks)*

Guidance for examiners on how to mark this question

Description of the features of a GUI

1 mark for at least one feature stated
1 mark for each expansion up to 4

Example answer

Windows / Icons / Menus / Pointers (1). Windows allow switching between different views (1). Icons provide pictorial shortcuts to other features of the program (1). Menus provide a structure that displays a list of the available options (1). Using pointers allows objects to be dragged and dropped (1).

6(b) *Mr Smith is not an expert in the use of the design software and will need help and support.*

Discuss how appropriate help and support could be provided for the users of this software. *(12 marks)*

Guidance for examiners on how to mark this question

1 mark for each method of help
Credit any valid expansion of that method
Max 12

Credit only methods of help, not advantages and disadvantages of those methods

Example answer

The first stage might be to read the software manufacturer's printed user-guide (1). Mr Smith could use on-screen help (1) to provide a search box (1). Tool tips might be available (1). Wizards could also be available (1) to explain complex features on a step by step basis to Mr Smith (1). The company may provide a website (1) which has a series of FAQ's (1) on often asked topics. Telephone support from the software designers could be available (1) offering Mr Smith the opportunity of a one-to-one discussion with an expert (1). On-line discussion forums (1) could also be used. Third party books/magazines may also be available for the software (1).

7(a) *Using pirated software, which is not licensed, is a crime.*

What is the name of the current legislation which makes it illegal to use unlicensed software? *(1 mark)*

Guidance for examiners on how to mark this question

Identification of the current legislation (1)
Do not accept an abbreviation (year is not necessary)

Must have <u>Copyright</u> plus one other as a minimum to gain mark

Example answer

The <u>Copyright</u>, Designs and Patents Act makes it illegal to use software which is not licensed (1).

7(b) *You are a data subject and will have personal data stored about you by different organisations.*

Explain, using examples, what is meant by a data subject *and* personal data. *(6 marks)*

Guidance for examiners on how to mark this question

Explanation of data subject
Examples of data subject
Explanation of personal data
Examples of personal data (max 3)

Example answer

A data subject is a living person (1) who can be identified (1) e.g. a customer of a bank (1)
Personal data is data that relates to me (1) and examples could be my medical records (1) or my bank details (1)

7 (c) *Discuss the issues that concern people regarding the privacy and security of data in ICT systems.* *(10 marks)*

Guidance for examiners on how to mark this question

Up to 10 marks for a suitable discussion
Be aware of current news events

NB Question asks about issues of concern, not methods of prevention.

People should be taken in the broadest context

Example answer

A failure of the system hardware (1) which could result in data loss (1).

People are concerned that correct procedures should be in place (1).

Theft of the data (1) which might happen because an unauthorised person has broken into the system through the network (1) or simply because someone has left their laptop in a car and it has been stolen (1). Also if data is not transferred electronically then it might be lost in the post on a DVD-R (1) which is not encrypted (1).

Many people may have access to stored data and unless it is password protected (1) or protected by access levels (1) it may not be private (1)

8   *The rapid development of ICT has enabled more people to work from home.*

Discuss the concept of working from home, including in your discussion:
- *how ICT has enabled more people to work from home*
- *the benefits that individuals can gain from working from home*
- *benefits to society of more people working from home*
- *any negative aspects of working from home.*

(20 marks)

Guidance for examiners on how to mark this question

Low mark range

Candidate uses relevant examples that correctly reference at least 1 point. 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 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 uses relevant examples that correctly reference at least 2 points and clearly demonstrates some understanding of the subject matter. The candidate has used a form and style of writing which is sometimes appropriate for its purpose but 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 of information 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 uses relevant examples that correctly reference at least 3 points and clearly demonstrates good understanding of the subject matter. Meaning is clear. The candidate has in the main used a form and style of writing appropriate for its purpose, with only 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. There may be occasional errors of spelling, punctuation and grammar. Text is legible.

11 – 15 marks

High mark range

Candidate uses relevant examples that correctly reference all 4 points and clearly demonstrates in depth understanding of the subject matter. 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. There are few if any errors of spelling, punctuation and grammar. Text is legible.

16 – 20 marks