



ASSESSMENT and  
QUALIFICATIONS  
ALLIANCE

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# Mark scheme January 2004

## GCE

### Information and Communication Technology

### Unit ICT2

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### Guidance on the award of the mark for Quality of Written Communication

Quality of Written Communication assessment requires candidates to:

- select and use a form and style of writing appropriate to purpose and complex subject matter;
- organise relevant information clearly and coherently, using specialist vocabulary when appropriate; and
- ensure text is legible, and spelling, grammar and punctuation are accurate, so that meaning is clear.

For a candidate to be awarded 1 mark for quality of written communication on the question identified as assessing QWC in a unit test, the minimum acceptable standard of performance should be:

- the longer parts (worth 4 marks or more) should be structured in a reasonably logical way, appropriate and relevant to the question asked;
- ideas and concepts should be explained sufficiently clearly to be readily understood. Continuous prose should be used and sentences should be generally be complete and constructed grammatically. However, minor errors of punctuation or style should not disqualify;
- appropriate AS/A level terminology should be used. Candidates should not use such phrases as ‘fighting disease’, ‘messages passing along nerves’, ‘enzymes being killed’ etc, but a single lapse would not necessarily disqualify. Technical terms should be spelled correctly, especially where confusion might occur, e.g. mitosis/meiosis, glycogen/glucagon.

The Quality of Written Communication mark is intended as a recognition of competence in written English. Award of the mark should be based on overall impression of performance on the question identified on the paper as assessing QWC. Perfection is not required, and typical slips resulting from exam pressure such as ‘of’ for ‘off’ should not be penalised. Good performance in one area may outweigh poorer performance in another. Care should be taken not to disqualify candidates whose lack of knowledge relating to certain parts of a question hampers their ability to write a clear and coherent answer; in such cases positive achievement on other questions might still be creditworthy. No allowance should be made in the award of this mark for candidates who appear to suffer from dyslexia or for whom English is a second language. Other procedures will be used by the Board for such candidates.

Examiners should record 1 or 0 at the end of the paper in the Quality of Written Communication lozenge. This mark should then be transferred to the designated box on the cover of the script.

## 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. From the examinations for 2003 onwards, where one-word answers are acceptable will be indicated on the question paper. (For 2002 the acceptance or otherwise will be determined at standardisation.)

### Specific marking guidelines

8. 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.
9. The only figures in the margin should be sub-totals for parts of questions and a final ringed total for a whole question.
10. 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.
11. 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.
12. 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.
13. All zero values should be crossed through.
14. All blank spaces should be crossed through with a vertical line through the text space – not in the margin.
15. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.
16. All blank pages must be crossed through.
17. 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 answer starts.
18. 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, user friendly and so on.
- d. An omission mark ^ 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.**

**19.** **NO** other symbols or comments should be used.

**20.** 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.

## Unit 2 Information : Management and Manipulation

Unless indicated otherwise each bullet point is worth one mark denotes an alternative word or phrase

1

*A document, containing text and graphics, is printed out from a computer system. Name **two** types of printer that may be used.*

- Laser (printer)
  - Ink jet (printer)/bubble-jet
  - Dot matrix/impact (printer)
  - Thermal (printer)
- NOT Laser-Jet, Desk-Jet, colour, black and white

**Max 2**

(2 marks)

2

*State a medium that may be used for backing up each of the following files, and explain why it is suitable.*

- (a) *A short, word-processed document*
- (b) *A multimedia presentation*

- (a)
- Floppy disk (Allow zip) /memory card/USB card/flash memory/pen drive (1), removable medium/does not require large capacity(NB Floppy disk only)/re-usable medium (1)
- (b)
- CD-R/W // CD-R // DVD-(+/-)R/W//DVD RAM // Zip disk //memory/USB card//flash memory / any removable hard disk (1), removable medium/needs large capacity (1)

**Allow Magnetic Tape**  
**NOT CD, CD-ROM, DVD**

(4 marks)

3

*Data can be encoded and encrypted.*

- (a) *Describe what data encoding means.*
- (b) *What is meant by the term encryption?*

- (a)
- to convert to a machine readable form/binary
  - that the computer can understand
  - e.g. ASCII, Bitmap etc Allow any file format

**Max 2**

(2 marks)

- (b)
- Scrambling of data/secret code
  - unauthorised viewers would not be able understand the data (as would not have decryption key)

**Max 2**

(2 marks)

- 4 *Two terms, generic package and integrated package, are often confused.*  
 (a) *Describe, giving an example, a generic package.*  
 (b) *Describe, giving an example, an integrated package.*

(a)

- An applications package that is appropriate for many uses
- E.g. Word-processors/DTP/spreadsheets/database management systems

**Max 2**    **2**    (2 marks)

(b)

- An applications package that consists of an number of distinct applications
- E.g. Word processor and spreadsheet and database (need at least 2)

**Max 2**    **2**    (2 marks)  
**4**

- 5 *A large mail order company has decided to upgrade the software used to process customer orders.*  
 (a) *Explain possible technical implications of changing the software.*  
 (b) *Explain possible human implications of changing the software.*

(a)

- Hardware may need upgrading (1) e.g. (1)
- Other software may need upgrading (1) e.g. (1)
- May be incompatible with other hardware/software used (1) e.g. (1)
- Data may need to be converted to new format (1) e.g. (1)
- New software not tested properly (1) e.g. (1)

**Allow extra mark for e.g.**

**Max 4**    (4 marks)

(b)

- May need training
  - Unfamiliar with new features/need time to adjust to using new features/if new software badly written can cause stress
  - Existing data needs transferring
  - takes time to change/check data on transfer//takes time to install
  - 'Old' procedures/keystrokes/menus may not still be available (1)
- e.g.....(1)
- Staff could be made redundant

NB New software not set-up correctly allow for either (a) or (b) but not both

**Max 4**    (4 marks)  
**8**

6

Three colleges in a large city are to merge and become a single college spread across the three sites. Each college has a Local Area Network (LAN) and these networks are to be joined together to form a Wide Area Network (WAN).

- (a) Explain **two** differences between a LAN and a WAN.
- (b) Give **two** advantages to the merged college of using the new WAN.
- (c) State **two** problems that could occur when using the new WAN.

(a)

- LAN restricted to a single site/building/campus (1) WAN more than one site/geographically remote locations (1)
- LAN connected via direct line/physical link/co-axial cable/UTP/fibre optic cable/radio (1) WAN connection via satellite link, modem, telephone line, microwave (1)

(4 marks)

(b)

- Staff/students can work/communicate across sites
- Software available across sites
- Data files available across sites
- Ability to backup at different locations

(2 marks)

(c)

- Slower transmission speeds between sites
- Programs/data not available if communications link fails
- Funding implications of maintaining communications link
- Viruses spread easily between sites

**Max 2**

(2 marks)

7

Name **three** different types of Human/Computer Interface (HCI). For each one state, with a reason, a situation where it could be used.

- **GUI/WIMP** (1)      **situation** (1) **reason/advantage** (1)
- Menu Driven (1)      situation (1) reason/advantage (1)
- Command line (1)      situation (1) reason/advantage (1)
- Natural Language (1) situation (1) reason/advantage (1)
- Form driven (1)      situation (1) reason/advantage (1)

Any 3 x (3, 2, 1, 0)

(9 marks)

8

*An airline uses two different types of processing in its computer systems. The airline booking system uses transaction processing for booking passengers' seats, and its aircraft use real-time processing for their on-board flight control systems.*

- (a) *Explain, using the booking system as an example, the term transaction processing.*
- (b) *Explain, using the flight control system as an example, the term real-time processing.*

(a)

- Deals with each booking as it is submitted
- Each transaction is completed
- Before the next is begun
- Cannot book the same seat twice

**Max 3***(3 marks)*

(b)

- System responds immediately to
- External conditions allow example
- And can influence these conditions

**Max 3***(3 marks)*



9

A small building society keeps records of its customers, their accounts and transactions in a relational database. Each customer can have one account. Examples from tables in the relational database are shown below.

- (a) State another field you would expect to see in the customer table. Explain why it is needed and how it could be validated.
- (b) Name the fields in the transaction table that:
- would need to be entered by the building society staff;
  - could be entered automatically by the system.

Explain how the database management report generator could use the two tables to produce statements to be sent to customers. Use the entries for Susan Smith to demonstrate the report produced. You may use a diagram to illustrate your answer.

Customer Table

Surname	Forename	Street	Town	Postcode	Account Number
Smith	Susan	9 Park Avenue	Rushworth	RH12 2PV	2573
Patel	Peter	19 The Crescent	Rushworth	RH12 5ST	4913
Jones	John	6 New Street	Rushworth	RH12 2XR	6410

Transaction Table

Account Number	Date	Transaction	Amount	Type	Balance
6410	16/10/2003	Deposit	£60.00	Cash	£560.00
4913	16/10/2003	Withdrawal	£150.00	Cheque	£1050.00
2573	16/10/2003	Deposit	£1045.77	Cheque	£5799.50
2573	20/10/2003	Withdrawal	£4500.00	Cheque	£1299.50
6410	21/10/2003	Withdrawal	£100.00	Cash	£460.00
2573	22/10/2003	Withdrawal	£50.00	Cash	£1249.50

(a)

- Telephone number/e-mail address (1) to contact customer (1) format check etc (1)
- Date of birth (1) identification of customer (1) range check etc (1)
- Title (1) for use in correspondence (1) select from list etc (1)
- Allow sort code (1) identifies the branch (1) format/length etc (1)
- Allow type of account (1) different interest rates etc (1) select from list etc (1)

**NOT AGE**

Any 1 x (3, 2, 1, 0) 3

3

(3 marks)

(b)

Entered by staff

- amount (1) account number (1) transaction (1) type (1)  
Automatic
- date (1) balance (1)

**6** (6 marks)

(c)

- Query
- Customer Name and Customer Address (1) Customer Account number (1) all at top of report (1)
- Date of statement
- Transactions need all 3 (1) sorted in date order and in body of report (1)
- Correct Balance (1) on same line/ at bottom of report (1)

**Max 6** (6 marks)