



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme January 2004

GCE

Information and Communication Technology

Unit ICT4

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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 4 Information Systems within Organisations

1

13.4 Information

Information is used by many people in an organisation, and for different purposes.

*Describe **two** ways of classifying information, giving an example of each.*

1 for classification (c), 1 for expanding/ways (w), 1 for example (e) to 2 x (3,2,1,0)

Classification	Ways
Source	internal, external, primary, secondary
Nature	quantitative, qualitative, formal, informal
Level	strategic, tactical, operational
Time	historical, current, future
Frequency	real-time, hourly, daily, monthly
Use/purpose	planning, control, decision
Form	written, visual, aural, sensory
Type	disaggregated, aggregated, sampled

Need the name of the classification for the 'c' mark, one or more of the ways as part of the description for the w mark and any example that fits the characteristic being described

For example:

A high-level manager may use sales information (e) that is based on information that has come from different sources (c), both internal and external (w), to help him decide what products to stock.

Note:

Candidates may offer pairs, such as Formal/informal, External/internal, and Strategic/Operational as the two ways. Treat these as the expanding/ways mark, and also credit any example. This way they can gain 2 marks. If they have also, in their narrative, mentioned the Classification name (e.g. Source, Level) then they can gain a third mark.

Do NOT accept Timely, Accurate, Up-to-date etc.

(6 marks)

2

13.5 management of change

A drinks wholesaler is introducing an information system that will change the way in which its operations are run.

*Describe **three** factors that will need to be considered by the management when they have to manage these changes.*

1 for area (a) , 1 for expansion (e) to any 3 x (2,1,0)

- Re-skilling (of existing employees) (1), assess training needs/have to take on specialist staff (1)
- Attitude of existing employees (1), resistance to change/de-motivation if fear redundancy/making sure they are consulted/well informed (1)
- Organisational structure (1), may flatten as a result/close (or open) departments/increase or decrease in no. of staff (1)
- Employment pattern and conditions (1), staff move around/get re-trained/longer(shorter) hours/shift work required (e.g. Call centre 24-hour operation) (1)
- Internal procedures (1), new working practices e.g. security policy/codes of practice/backup/disaster recovery/interface with suppliers or customers/legislation issues (1)

(6 marks)

3

13.8 PM and ICT teams

Successful ICT teams have a well-balanced mix of people.

*Describe **four** other characteristics of a good ICT team.*

1 for characteristic (c), 1 for explanation (e) to any 4 x (2,1,0)

- Leadership (1) as appropriate management and project control will encourage the team to work together /in an organised manner(1)
- Appropriate allocation of tasks (1), so that each team member is asked to work to their strengths (1)
- Adherence to standards (1), so that anyone would be able to continue the work in an emergency/others to do with professional or methodical ways of working e.g. appropriate documentation is produced and kept up-to-date (1)
- Monitoring of progress (1), to ensure that the project completes to schedule/to ensure that the work has not been underestimated/ to ensure that each team member is working at the appropriate pace (1)
- Monitoring of costs (1), to ensure that money has not been misused/ to keep within the customer's budget/ to be able to report back to customer (1)
- Control (over change) (1), to make sure that the project is delivering only what is required/ to allow for change to be incorporated or left to a later phase/ to ensure the project is delivered to original schedule (1)
- Someone/people who are able to communicate well with people outside the team e.g. business managers/end users/system commissioners (1) to effectively gather accurate requirements/to be able to manage external expectations/to report back effectively (1)

(8 marks)

(**NOT** simply Good Communication skills or Good written ...or good verbal...)

Do **NOT** allow well-balanced mix or size of team answers – in the question

4

13.3 IS strategy

State, and give an example of, **five** factors that might be considered when producing a corporate information system strategy.

NO MARKS WITHOUT THE FACTOR

1 for factor (f), 1 for example (e) to any 5 x (2,1,0)

- organisation and functions of management (1), description of current departments/functions, how information used (1)
- methods of planning and decision-making (1), levels of (strategic, tactical, operational)/formal and informal methods/ democratic(consensus)/ project boards/autocratic/automatic/ prescriptive/descriptive/rational (1)
- legal and audit requirements (1), nature of business/compliance with DPA or other acts/industry standards etc (1)
- general organisational structure (1) pyramid etc and information going up/down between (1)
- responsibility for the information system within an organisation (1), IT manager/department, managers of different departments (1)
- information flow (1) directions/movement/type/procedures (1)
- hardware/technology (1) age/capabilities/upgrading of/compatibility (1)
- software/applications (1) compatibility/future direction/ upgrades/versions/generic/bespoke (1)
- standards and behavioural factors (1) personalities/motivation/ability to adapt to change (1)

(10 marks)

e.g.

- How information will flow around the organisation (f), for example the use of a company wide intranet or internal email systems can be used to get information to all employees quickly and efficiently (e).
The structure of the organisation (f), for example a formal pyramid shaped structure will require a method of ensuring information is passed up and down the structure appropriately and in a timely manner (e).

5

13.9 Info and the professional

A community college has a strict Code of Practice for the users of its computer systems.

- (a) *Explain what is meant by a Code of Practice.*
- (b) *Explain why a Code of Practice is required..*
- (c) *Describe **three** topics that could be included in a Code of Practice.*

- (a) “Guidelines” NOT a suitable substitute for “Rules”

An agreement between the college (1) and the user (1) that governs the usage of the computer system (1)

Or

A set of rules which governs the use of ICT systems (1)

Set by an organisation (1)

For that organisation’s ICT users to follow (1)

(3 marks)

- (b) It has procedures and rules over and above any legal requirements/ it sets acceptable boundaries (1), so that disciplinary action can be taken (1)

(2 marks)

- (c) 1 for item (i), 1 for description/expansion/example (e) to any 3 x (2,1,0)

- responsibilities for use of college hardware
- responsibilities for use of college software/adherence to software licensing and copyright
- responsibilities for use of data/adherence to computer misuse
- responsibilities for correct use of time
- responsibilities for use of the internet or intranet
- authorisation paths/levels, access rights/job related e.g. Office staff do not need access to financial records
- security, password/ids , keep password safe/regularly change etc
- company’s implementation of legislation e.g. DPA
- penalties for misdemeanours e.g. sanctions, warnings, dismissal etc

(6 marks)

6

13.4 Data

Since being introduced over 20 years ago, barcodes are now widely used as a way of getting data into information systems.

*Name and describe **two** applications where the use of barcodes for data capture has had an impact, clearly stating **one** advantage of that use.*

Any 2 applications, 1 for naming the application/area (a), 1 for where the barcode is (b), 1 for how the data gets into the system (c), and 1 for stating the advantage of using them (d) to 2 x (4,3,2,1,0)

- Airport baggage handling – paper handles are attached to luggage with bar codes for destination and changeover airports, scanners route luggage to correct loading bay – impact is that now process much faster as baggage handlers do not have to read labels (scanners above the conveyor belt)/ can tell customer quickly where luggage is, if lost/ general speeding up of all processes at airport.
- Parcel delivery – attach bar code to package/letter, also on input sheet, customer can track parcel round the world, often on the internet through satellite tracking systems, portable scanners used on delivery – impact is more security, know where package is in transit, faster working at post office/parcel collection, just ‘peel and stick’
- Any organisation using very large amounts of paper/bills e.g. Inland revenue or Electricity boards, bar coded forms/bills, allow office staff to call up correct customer details, can track progress of the form from issue through receipt – impact is more security (can deny access if no bar code) and more accuracy, more throughput.
- Lottery ticketing – system generates the bar code on printing of ticket, indicates where bought, it is used to check for winners by putting it back in same machine on different mode – impact is very quick throughput and safer from fraud than anything manually typed/keyed.
- Manufacturing systems – bar codes on components, can be identified and tracked through the warehouse, coordinate the right parts for delivery to the assembly line – impact, save time looking for items in an automated environment.
- Hospital patients/new baby systems – patients/new born babies are tagged so that no mix-ups can occur, vital information recorded at the same time, check baby not given to wrong mum/correct operation or check correct procedure is carried out – impact less mistakes/less lawsuits!
- Borrowing systems – both item (book/video etc) and borrower card can use bar codes to identify, scanners read the information and record the loan, can be used to return the item – impact, accuracy, consistency, throughput.
- EPOS system – bar codes on each item, scanned either at checkout using flatbed scanner, or by smaller hand-held scanner, can provide description and item price to save manual keying in of price.
- Stock Control – bar codes on each item, scanned either at checkout using flatbed scanner, or by smaller hand-held scanner, can automatically update stock levels in system

- Sales information/forecasting – bar code on each item have been scanned in at checkout/till, information and reports provided for tactical/strategic management, automatically.
- Examination administration systems – entry forms have bar codes produced at board, filled in by schools/colleges, scanned in at board, accuracy/faster processing etc as advantages

Any other reasoned and probable system where bar codes would or could be used.

(8 marks)

7

13.2 Success or Failure of an Information System

In an ever competitive business world, management sometimes expect “miracles” from their IT department, forever wanting it to provide new and better systems.

*Describe **three** issues that the IT department should address, so that any new information system developed is more likely to succeed.*

1 for factor (f), 1 for expansion (e) to any 3 x (2,1,0)

- Professional standards used (1) so everyone knows what processes and procedures to use during development (1)
- Effective team working/balanced teams as a norm(1), with everyone working together on appropriate tasks, well-controlled by good leadership (1)
- To have a project management methodology in place (1) that allows good control of the development process (1).
- Always follow a life-cycle methodology in a standard way (1), to allow effective/exhaustive analysis/design/testing methods, making sure no important steps are missed (1)
- Strong communication links with management (1), so that impossible demands are not made/so that compromises can be agreed for any particular requirement (1)
- Involvement of manager/user in development (1) needs to be at an appropriate level (1)
- Implementation strategy (1) making sure that all parties are prepared (e.g. training planned or documentation written) (1). **NOT**

CHANGEOVER METHOD

(6 marks)

8

13.7 user support

A software house has produced a package for sale to the insurance industry. The package has been written so that it can receive data from call-centre systems, from the Internet or from salespersons' laptops. The package produces reports for company management, for call-centre staff and the mobile salesmen, and for customers applying on-line.

*(a) Describe **three** user support options that this software house could offer its potential customers.*

(b) The Package produces information for the following types of user:

- *company management;*
- *call-centre staff and the mobile salesmen;*
- *customers who apply on-line.*

*For each of the **three** identified types of user, describe a different method of providing them with instructions and help in the use of this package, justifying your choice.*

(a) 1 for method (m), 1 for description/expansion (e) to any 3 x (2,1,0)

- Help Desk/phone line (Call centre) open hours of business (1), a package expert to guide/help (1)
- Call out support service (1) where technician is available to come on-site to provide specific support (1)
- On-site technical support (1), for first few weeks/months of new installation/to be on-hand (1)
- User guides for the package (hard OR soft copy) (1), people can work at own pace/have instructions at side/look it up for themselves (1)
- Communications systems/bulletin boards/specific internet site/email updates/on-line package user groups (1), more able users can help themselves (1)
- On-line technical help to package supplier(1) use of the internet to get queries solved by a package expert/via email (1)
- On-screen help(1) installed with package/wizards to help solve problems (1)

(6 marks)

(b) 1 for type of documentation (t), 1 for description/expansion (e), 1 for justification (j) to 3 x (3,2,1,0) The description mark is for indication of how system is used, NOT a description of type of support

- Company management – e.g. (Paper) manual (1) holding directions for using the reports from the package with samples (1) useful to help them understand which report will aid decision-making (1); also allow information sessions and others....
- Call-centre staff/mobile salesmen - e.g. On-screen/on-line help(1) to help solve problems with data entry (1), easy to pop up on-screen whilst on the phone(1); e.g. CD-ROM (1) holding user guide for data entry (1) can carry round, don't have to be connected to network/pick up latest version from office/any reasonable justification (1); also allow information sessions, phone help and others...

Customers who apply on-line – Detailed non-technical on-line user guide/simple on-screen instructions (1) with FAQs and step-by-step instructions for the functions that are available/showing examples of output documentation with explanations /able to be printed off for reference (1), needs simple explanations to all aspects, including what to put in each field. (1)

(9 marks)

9

13.6 legislation – essay question

Organisations that make use of Information Technology, and use ICT systems, have to ensure that they comply with the relevant legislation currently in place.

Discuss the implications of complying with such legislation on the operation of an organisation, showing how these may impact on the procedures used by the organisation.

Your discussion should cover:

- *data protection legislation;*
- *software copyright and licensing legislation;*
- *computer misuse legislation;*
- *health and safety legislation.*

The quality of written communication will be assessed in your answer.

MAXIMUM 16 marks for content (20 available) and 4 for Quality of Written Communication

Code -

- general as **G**
- dpa as **D**
- software copyright as **S**
- computer misuse as **C**
- health and safety as **H**

(G) Max 4 marks – 2 for introduction and 2 for conclusion only. 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.

(D, S, C, H) Under each of the four headings, allow up to 4 marks. Points made are worth 1, plus an expansion or example mark, if deserved, for:

- 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)”
- Reasoned implication (e.g. extra security); only accept cost implications if explained properly
- Impact on procedures (e.g. having a code of practice to set out rules, appointing a health and safety officer, installing monitoring software)

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. (4 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. (3 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. (2 marks)

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 (1 mark)