# Mark scheme
# June 2003

# GCE

## Information and Communication Technology

**Unit ICT2**

# 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.

## Specific marking guidelines

7. 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.

8. The only figures in the margin should be sub-totals for parts of questions and a final ringed total for a whole question.

9. 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.

10. 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.

11. 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.

12. All zero values should be crossed through.

13. All blank spaces should be crossed through with a vertical line through the text space – not in the margin.

14. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.

15. All blank pages must be crossed through.

16. 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.

17. 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 the use of brackets or 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.

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

**19.**    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

**1**     *A photograph is scanned so that it can be included on a web page.  The scanning software encodes the image, and the result is then stored for future use.*

*Name two types of encoding that can be used.*                    *2 marks*

*(One word answers are acceptable for this question.)*

- Bitmapped
- Compressed bitmapped
- Vector
- Specific  examples  e.g. BMP, PIC, PCT, PCX  GIF,  JPEG, TIF, WMF etc

  ALLOW ANY TWO EXAMPLES OF TYPES OF ENCODING
                                                      **Max 2**   2 marks


**2**     *State, with reasons, two elements of hardware that enable a personal computer to be connected to the Internet.*          *4 marks*

- (Cable) Modem / Terminal Adaptor (1) signal conversion /dial up connection (1)
- Router (1) allows multiple PC connections (1)
- Telephone connector /PHONE LINE (RELUCTANTLY ALLOW <u>TELEPHONE</u> WIRE) or ISDN or ADSL or Broadband (1) allows external connection/medium to transfer data (1)

NOT CONNECT TO INTERNET
                                                      **2 x (2,1,0)**   4 marks


**3**     *Name the mode of processing that would be suitable for each of the following ICT systems:*

|       |                              |          |
|-------|------------------------------|----------|
| *(a)* | *monthly payroll;*           | *1 mark* |
| *(b)* | *controlling a chemical process;* | *1 mark* |
| *(c)* | *cinema ticket booking;*     | *1 mark* |
| *(d)* | *kitchen designing.*         | *1 mark* |

*(One word answers are acceptable for this question.)*

| (a) | Batch Processing | 1 mark |
|-----|------------------|--------|
| (b) | Real- Time Processing | 1 mark |
| (c) | Transaction Processing ALLOW Pseudo real-time | 1 mark |
| (d) | Interactive Processing | 1 mark |

**4**   *Personal computer systems are usually supplied with some system software already installed.*

*Explain, using examples, the purpose of system software.*   *4 marks*

*(The use of brand names will not gain credit.)*

- performs tasks that are required because a computer is used
- Operating System (1) Manages and controls the computer and its peripherals allow e.g. Memory Management, Provides User Interface, allocates and monitors system resources (1) hides the complexity of the hardware from the user (1)
- (Housekeeping) utilities (1) e.g. disc formatter/Virus Checker /Firewall /compiler/interpreter/assembler (1)
- Other e.g. Peripheral Driver (1) Provides interface/communication between the computer/operating system/application package and the scanner (1) / translates image into a form the computer can understand (1)
- Set-up/Installation Software (1) addition of new hardware/software (1)

ALLOW UPTO 3 OPERATING SYSTEM FUNCTIONS
             **Max 4  no more than 3 functions or 3 explanations**   4 marks

AQA

**5**     *A doctor's surgery has recently converted its manual patient record system to a computer-based system.*

   *(a)*     *Describe two methods that the surgery could use to keep these computer-based records secure.*                    *4 marks*

   *(b)*     *The surgery also needs to ensure the privacy of the records. Using an example from the above system, describe the difference between security and privacy.*                    *3 marks*

(a)
- Use of passwords (1) to prevent <u>unauthorised</u> access to the <u>data</u> (1)
- not leaving terminals logged on/ keyboard locks /password protected screen savers etc  (1) to prevent <u>unauthorised</u> access to the <u>computer system</u> (1)
- Staffing issues (1) vetting/training/dismissal (1)
- Use of encryption (1) sensitive data is unreadable by unauthorised users (1)
- Levels of permitted access (1) e.g. Doctor r/w receptionist read etc (1)
- Firewall (1) prevention of <u>unauthorised external</u> access NOT just HACKING (1)
- Backup of data (1) restore after loss or corruption (1)

                                              **Any 2 x (2, 1, 0)**     4 marks

(b)
- Privacy – certain data should only be accessed by authorised personnel.
- Security - application of safeguards to protect data from accidental or malicious modification, destruction or damage.
- Example related to surgery either security or privacy.

                                              **Max 3**     3 marks

**6**      *Describe two features of each of the following types of Local Area Network (LAN):*

|  | *(a)* | *peer-to-peer network;* | *4 marks* |
|---|---|---|---|
|  | *(b)* | *client-server network.* | *4 marks* |

(a) Peer-to-peer
- Very simple network which provides shared resources.
- All computers have the same status.
- Any computer can access files/devices on any other computer (1) provided permissions have been set (1)
- Any computer can initiate and exchange data with any other.
-  Allow 'any computer can act as a client or a server'
- Few additional facilities e.g. limited security.

ALLOW EXTRA MARK FOR GOOD DESCRIPTION OF ANY POINT
ALLOW ANY NON-DUPLICATED REVERSE POINTS

**Any 2 x (2,1,0) or 4 x (1,0) or 1 x (2,1,0) and 2 x (1,0)**        4 marks

(b) Client-server
- Devices are treated as clients or servers, cannot be both.
- Clients send requests for services to servers.
- Servers provide central services (1) e.g. software installation, backups etc (1)
- Servers provide centralised storage of data.
- If the server goes down then the clients on the network cannot access the resources provided by the server.

ALLOW EXTRA MARK FOR GOOD DESCRIPTION OF ANY POINT
ALLOW ANY NON-DUPLICATED REVERSE POINTS

**COST IS NOT A FEATURE**

**Any 2 x (2,1,0) or 4 x (1,0) or 1 x (2,1,0) and 2 x (1,0)**        4 marks

AQA

**7**      *WIMP (Windows, Icons, Menus and Pointers) interfaces are provided by*
*software on most personal computers. However, there are also other types of*
*human/computer interface.*

*Describe what is meant by each of the following, and for each one give an*
*example of an appropriate use:*

|  |  |  |
|---|---|---|
| *(a)* | *menu driven interfaces;* | *3 marks* |
| *(b)* | *command line interfaces.* | *3 marks* |

*(The use of brand names will not gain credit.)*

(a) Menu driven interface
- Onscreen list of selections…..
- ….that users can choose one action from /convenient for novice users
- E.g. terminals used by public with touch sensitive screens etc

3 marks

(b) Command line interface
- User responds to a prompt
- By typing in a response/command
- Provides greater flexibility of response/user needs to know commands
- E.g. (Complex) operating system requests, FTP, Telnet

**Max 2 plus example**      3 marks

**8**    *Software packages contain many advanced features that are often only used by certain people.*

*Explain, with the use of examples:*
*(a)  two advanced features of a word-processing package that would be useful to an author writing an ICT textbook;*                    *6 marks*

*(b)  two advanced features of a spreadsheet package that would be useful to an accountant preparing a financial report.*            *6 marks*

(a) ICT Textbook
- Feature (F) (1) Description (D) (1) example or expansion (E) (1)

The following are only examples there could be many other responses
- Headers and footers (1) for different chapters/sections (1) e.g……. (1)
- Outlining (1) organising a document with consistent headings (1) e.g. consistent chapter styles (1)
- Contents table (1) automatically controlling page references (1) e.g.
- Cross referencing (1) automatically linking to index (1) for use with technical terms (1)
- Importing Graphics/ALLOW Screenshots/drawing diagrams (1) Text Wrapping round images (1) e.g.     (1)

Columns, reviewing comments, technical dictionary, OLE, Footnotes, Style sheets, templates, use of macros etc

**ALLOW A WELL-ARGUED REASON INSTEAD OF AN EXAMPLE IF THE QUESTION IS ANSWERED IN CONTEXT**.

**NOT STANDARD EDITING, FORMATTING AND FILE MANAGEMENT TECHNIQUES**

                                   **Any 2 x  (3, 2, 1, 0)**   6 marks

(b) financial report
- Feature (F) (1) Description (D) (1) example or expansion (E) (1)

The following are only examples there could be many other responses
- Charts (1) for summarising figures in an easy to read form (1) e.g……. (1)
- Complex/specialised functions e.g. Vlookup, IF, ALLOW Whatif/Modelling  (1) description (1) e.g. …..
- Macros (1) automatically perform functions (1) e.g.
- Complex Features  e.g. Pivot Table (1) provides automatically summarised information (1) e.g….

Conditional formatting, Goal seeking functions, linked multiple sheets, validation

**ALLOW A WELL-ARGUED REASON INSTEAD OF AN EXAMPLE IF THE QUESTION IS ANSWERED IN CONTEXT**
**NOT STANDARD EDITING, FORMATTING, SIMPLE FORMULAE AND FILE MANAGEMENT TECHNIQUES**

                                   **Any 2 x  (3, 2, 1, 0)**   6 marks

**9**    *A company faxes orders to its suppliers at the end of each week. An order is only produced if the stock is low. Each order consists of approximately five products.*

   *(a)*    *State three items of information that the company would normally send to its suppliers about each product being ordered.*          *3 marks*

   *(b)*    *The faxes are produced as a paper report generated by the product database system.*

   *Sketch a diagram to show a possible layout for this report.*

   *Annotate your diagram to explain the reasons for each element of your design.*          *8 marks*

   *(c)*    *The company has decided that, in future, it will e-mail the orders to its suppliers.*

   *Give two advantages to the company of using e-mail to send the orders generated by the product database system.*          *2 marks*

(a)
- Product code/number/Barcode
- Product description/name
- Price
- Re-order amount/quantity ordered

ALLOW SIZE or COLOUR

                                             **3 max**          3 marks

(b) Must have diagram
- Title/Document Identifier (1) clear identification of document (1)
- Date (1) brief description (1)
- Order number (1) brief description (1)
- Name and/or address of supplier (1) brief description (1)
- Name and/or address or phone number or contact details of company/Company Logo/Account number (1) brief description (1)
- Separate Delivery or Invoice Address (1) brief description (1)
- Product number, Product description, Re-order amount, Price [must match (a)] (1) brief description (1)
- Sorted on product code (1) brief description (1)
- Total price/VAT/Delivery Charge/Discount (1) brief description (1)
- Authorisation (1) brief description (1)

**Only one mark for each of up to 4 elements of there is no diagram**

                                     **Any 4 x (2, 1, 0)**          8 marks

(c)
- Two way communication, response is easier using reply feature
- Can be fully automated
- Supplier's computer does not need to be switched as message is sent and cannot be engaged on unlike fax
- Problems with quality of fax at receiver's end
- ALLOW cost ONLY if fully explained
- ALLOW speed if related to EDI

                                        **Max 2**          2 marks