



ASSESSMENT and  
QUALIFICATIONS  
ALLIANCE

# Mark scheme

# June 2001

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## GCE

# Information and Communication Technology

## Unit ICT2

## Unit 2: Information: Management and Manipulation

### 1. Topic 11.5 – Manipulation and/or processing

NB QUESTION IS **STATE**

Unless indicated otherwise, each bullet point is worth one mark

/ denotes an alternative word or phrase

- Date
- Sound
- Picture/video/bitmap/graphics/images
- Binary code/Program
- Boolean
- Real Numbers/integers/BCD/Numeric – used for arithmetic/currency

**Max 2**

**2**

### 2. Topic 11.3 – Organisation of Data for effective retrieval

- Independence of data
- Less (allow no) redundant data/less duplicated data
- Consistency of data
- Improved quality of management information
- "Single input" principle/updating less time consuming
- Increased productivity as ad hoc reports can be generated to meet particular needs/relationships between tables allow extraction of linked information
- Allows different access rights for different parts of database

**Max 4**

**4**

### 3. Topics 11.4 - Software; nature capabilities and limitations (a) 11.7 - Hardware; nature, capabilities and limitations (b) 11.10 – Human Computer Interface (c)

(a)

- Provides interface/communication between the operating system/computer/application package and the printer
- Translates formatting and highlighting information into a form that the printer can understand
- Stores page set-up/configuration
- Translates fonts, bit maps and size control
- Error messaging e.g. paper out, ink low etc.

**Any 2 × 1**

**2**

(b)

- Sound files too large to go on floppy disk.

**1**

(c)

- audible error messages
- audible instructions for the user
- audible progress reports on printing.

**Any 1 × 1**

**1**

**4**

## 4. Topic 11.10 – Human Computer Interface

(a) **STATE**

- Windows/dialogue boxes
- Icons/Buttons
- Menus/Pull down /Pop up menus
- Pointers/Mice

NOT WIMP by itself

**Max 4****4**(b) **DESCRIBE****Information displayed on screen will be reproduced exactly on a printer - NO CREDIT**

- this includes font types/style, font sizes bold, italics, underscore, superscript (1 mark 2 effects, 2 marks 3 effects)
  - no need for colour or special symbols(1) to represent these effects(1)
  - Possible to see and manipulate the eventual layout(1) on the screen more easily (1)
  - improved productivity/(allow saves time if qualified) (1) because /fewer drafts/less switching to print preview (1)
  - easier formatting/manipulation (1) of objects /e.g. image, clipart, tables (*NB no marks just for importing or mentioning objects*)(1)
- NOT Grammar and Spelling

**Any 3 × (2, 1, 0)****6****10**5. Topic 11.8 - Security of Data (a)  
11.4 - Capabilities of Software (b)  
11.6

## (a)

- Security procedures e.g. not leaving terminals logged on/ password security
- Staffing issues vetting/training/dismissal
- Backup procedures
- Use of encryption
- Virus checking
- Levels of permitted access
- Use of passwords
- Use of software to monitor all terminal activity

**Any 3 × 1****3**

## (b) (i)

- Automation of presentation/timing/ Availability of transitions between slides
- Use of video/animation/sound to improve impact
- Ease of editing presentation/ability to change or update information instantly
- Importing of live information from other packages
- Pack and go/creation of stand-alone presentations

**Any 3 × 1****3**

(b) (ii)

- Font sizes for text (1) appropriate to venue/audience etc (1)
- Use of style/colour/material (1) appropriate to intended audience (1)
- Application of Company' Standards (1) e.g. layout, logos etc. (1)
- Adoption of clear layout principles/Avoidance of information overload (1) in order to impart information effectively(1)
- Use of good quality Images/Animation/Sound (1) to emphasise information/as poor quality items will distract audience (1)

**Any 2 × (2,1,0)**

4

10

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6. *11.4 - Nature and types of Software/Capabilities of Software*

(a)

- Manages all the other programs in a computer
- Manages user communication with the computer
- Handles input/output from attached hardware devices/peripheral control
- Resource allocation and scheduling
- Memory management
- Backing Store management
- Management of multitasking
- Interrupt handling
- Boot/reboot/boot-strap/loading user interface

**Any 3 × 1 3**

(b)

- An applications package
  - That is appropriate to many areas
  - Of day to day business operations/allow suitable examples (must have more than one)
  - Word-processors/DTP (1), spreadsheets (1), database management systems (1), Integrated package
- (1) *maximum of three packages*

**MAX 6 marks 6**

(c)

- Allows the user to specify the interface required
- The functions required
- Then automatically generates the code
- To produce the customised application

**MAX 2 marks**

2

11

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7. Topic 11.3 - Organisation of data for effective retrieval (a)  
11.2 - Verification and Validation (b)

(a)

- Number of tickets
- Venue of festival
- Name of Festival
- Date of festival
- Type of ticket
- Price of ticket
- Method of Payment
- Date of Birth
- Telephone number
- E-mail address
- Credit/Debit/Switch card number/details
- Allow marketing issues

Any 3 × 1

3

(b)

- **(Number of tickets)** Range check/Format check/Presence check/Type check (1) and description (1)
- **(Venue)** Format check/Presence check/Look-up list (1) and description (1)
- **(Date)** Format check/Presence check/Range Check/Cross field check with venue/lookup (1) and description (1)
- **(Type)** Format check/Look-up list (1) and description (1)
- **(Price)** Type check/Range check/Look-up list/Cross field check (1) and description (1)
- **(Method)** look-up list (1) and description (1)
- **(Telephone number)** Format Check (1) and description (1)
- **(E-mail Address)** Format Check (1) and description (1)
- **(Card)** Format Check/Check digit/ (1) and description (1)
- **(Marketing)** an appropriate check (1) and description

NB if fields not mentioned take checks in same order as part (a)

Any 3 × (2, 1, 0)

6

9

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8. Topic 11.9 - Network Environments

(a)

- Data/information can be shared without need for duplication
- Software can be shared
- Data transfer is improved
- Communications are improved/Team-working is more effective
- Centralised upgrading/installation of software
- Improved sharing of peripherals e.g. printers
- Central control of security
- Central control of backup

Any 3 × 1

3

(b)

- Central pool of data/printer available to all employees
- Central control of security (if not given in (a))
- Central control of backup (if not given in (a))
- Centralised upgrading/installation of software (if not given in (a))
- Dedicated servers usually provide faster access to network resources
- Users are freed from network management tasks
- Computers may be of different types

**Any 2 × 1****2**

(c)

- Server (1) plus reason (1)
- Network Interface cards (1) plus reason (1)
- Transmission media/cabling (1) plus reason (1)
- Hub/switch (1) plus reason (1)
- Modem/Terminal adapter (1) plus reason (1)

**Any 2 × (2, 1, 0)****4**  
**9**

9. *Topic 11.1 - Data Capture*  
*11.7 - Hardware; nature, capabilities and limitations*

(a) (i)

- typed text and handwriting needs to be clear (1) otherwise conversion to characters may not take place/*allow good example* (1)
- Damaged/creased folded documents (1) affects accuracy of results (1)
- results are not always accurate (1) so the imported text needs to be proof-read/spell-checked (1)
- layout/formatting of page lost (1) copies not in same format as original (1)

**Any 2 × (2, 1, 0)****4**

(a) (ii)

- Scanning a document is faster than typing it (1) reduction in staff time required/for non-touch typists (1)
- Not using keyboard (1) reduction in RSI(1)
- text to be stored in a form that can be edited (1) allows updating of previously produced documents without completely retyping them (1)
- scanning of documents can be performed by non-typists (1) allows use of non-specialist staff (1)
- OCR document is smaller in size (1) files size is reduced (1)

**Any 2 × (2, 1, 0)****4**

(b)

- Maps
- Plans
- OMR documents
- Tables of data
- Charts/diagrams
- Pictures/Photographs
- Music
- Archive documents
- Signatures

**Any 3****3**  
**11**