



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme January 2001

GCE

Information and Communication Technology

Unit ICT2

Unit 2: Information: Management and Manipulation

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

1 Topic 11.4 – Capabilities of software
NB QUESTION IS **STATE**

- Cut/Copy and Paste
- Find and Replace
- Insert/Insert file/Insert graphic
- Delete letter/word/line/paragraph
- Spell check/grammar check

Any 2 × 1

2

2 Topic 11.9 Network environments
NB QUESTION IS **DESCRIBE**

- 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 (1) WAN connection via satellite link, modem, telephone line (1)

Any 2 × (2, 1, 0)

4

3 Topic 11.5 Manipulation and/or processing
NB QUESTION IS **STATE**

- CD-ROM/CD-RW / CD-R **NOT CD**
- Large size of sound files
- Floppy disk only suitable for single sounds

Any 2 × (1, 0)

2

4 Topic 11.4 Capabilities of software

What is a macro:

- Ability to store/record/define a sequence of instructions
- Actuated by a single instruction/key sequence/hot key/button/icon selection

2

Situation:

- Example of any sequence of commands that is likely to be required frequently or
Example of any sequence of commands to automate a task or
Example of any sequence of commands to provide a customised user environment

Any 2 × 1

2

4

5 Topic 11.3 Organisation of data for effective retrieval

- Data independence (1) - structure does not affect the programs which access the data i.e. set up time for new applications is reduced (1)
- Quality of management info. is improved (1) i.e. Info. is more valuable as it is based on a single, comprehensive collection of data (1)
- Increased productivity (1) i.e. ad hoc reports can be generated to meet particular needs (1)
- Consistency of data (1) - less data duplication so errors due to discrepancies are reduced (1)
- Input preparation reduced (1) to "single input" principle (1)
- Control over redundancy (1) i.e. updating less time-consuming as data duplication is minimised / less storage space required(1)
- Integrity of data (1) i.e. DBMS can specify constraints when data is added /Greater security of data (1)
- Centralised control of data(1) More information available to users due to centralisation of data (1)
- Faster searching (1) for non-key data (1)
- Improved linking (1)

3 × (2, 1, 0)**6**

6 Topic 11.10 Human/Computer Interface

(a)

- ease of transfer of skills to different packages
- shorter familiarisation/learning time
- after learning first package
- less training costs for employer
- greater range of tasks/software accessible to users
- confidence building for naive users

Any 4 × 1**4**

(b)

- Common tool bars
- Common menu structure
- Common functionality of pointing devices
- Common icons/buttons
- Tool bars/buttons/icons in same place on screen
- Standard key combinations/short cuts
- Help in same format

Any 4 × 1**4**

8

7 Topic 11.2 Verification and validation

VALIDATION CHECKS MUST BE DIFFERENT FOR EACH PART

(a) (i)

- Format/Character check (1) check for appropriate range of characters/Relevant Example. (1).
- Presence check (1) check that data is put into the field (1)

Any 1 × (2, 1, 0)**2**

(a) (ii)

- Format check (1) check for uppercase alpha numeric/picture given (1)
- Lookup (1) on range of local postcodes (1).
- Length check (1) check that there are 7/8/9 characters (1)
- Cross field check (1) with address (1)

Any 1 × (2, 1, 0)**2**

(a) (iii)

- Format check (1) check for appropriate structure and range for a date e.g. DD/MM/YY (1).
- Range check (1) check for over 16/18 (1)

Any 1 × (2, 1, 0)**2**

(b)

- Membership number/Customer ID etc. to uniquely (1) identify the member (1)

MAX 2 marks**2**
8

8 Topic 11.5 Manipulation and/or processing

(a)

- all data is collected together
- over a set period of time/into batches of a set size
- to be processed in one computer run
- without any human intervention
- Large volume of documents all of the same type

MAX 3 marks**3**

(b) (i)

- processing can be done when computer system is quiet
- requires less staff
- requires less hardware i.e. interactive terminals

MAX 1 mark**1**

(b) (ii)

- run may fail/not all students details updated if forms are incorrectly completed/lost
- details may be out of date for up to a week
- error corrections may take further week

MAX 2 marks**2****NB Allow reverse for (i) and (ii) but no repetition**

(c)

- Deals with each set of data as it is submitted
- Each transaction is completed
- Before the next is begun

MAX 3 marks**3**

9 11.8 Backup systems

(a)

- To avoid permanent data loss
- To ensure the integrity of stored data e.g. backup sufficiently up to date

MAX 2 marks

2

(b)

- Selection of hardware/storage medium (1) e.g. DAT Tape/RAID etc. (1)
- Selection of software(1) with regard to facilities(1)
- Recording of transactions (1) e.g.....(1)
- What will be copied? (Full or differential) (1) e.g.....(1)
- Frequency of copying (1) e.g.....(1)
- Number of backup copies kept (1) e.g.....(1)
- Recovery Procedures (1) e.g.....(1)
- Location/security of backup storage (1) e.g. Off-site/Fireproof safe/via INTERNET (1)
- Job responsibilities for backup strategy (1) e.g.....(1)
- Prevention of access to backup (1) e.g. encryption/access rights/password protection (1)
- Organisation of backups (1) e.g. labelling.....(1)
- Timing of backup operation (1) e.g. at night when the system is quiet (1)

Any 5 × (2, 1, 0)

10

12

10 11.1 Data capture

(a)

- Accurate input (1) audible signal if bar code misread, check digit to ensure bar code read correctly (1)
- Ease of changing prices (1) without re-pricing stock (1)
- Management reports (1) for sales analysis (1)
- Stock reorder reports (1) to help prevent out of stock items (1)

Any 2 × (2, 1, 0)

4

(b)

- Prices not visible on product (1) customer needs to look elsewhere e.g. on shelf for price
- Problems if system 'goes down / item does not have bar code/ bar code is not readable (1) need alternative method e.g.....(1)

Any 1 × (2, 1, 0)

2

6

11 11.8 Security of data

(a)

- Keyboard locks/swipecards (1) to prevent use of equipment by unauthorised persons (1)
- Floppy disk drive lock (1) to prevent unauthorised copying/removal/addition of data (1)
- Proxy Server (1) to prevent unauthorised remote access (1)
- Removable disk drives (1) so data can be kept away from equipment (1)

Any 2 × (2, 1, 0)**4**

(b)

- Password protection (1) to prevent access to system (1) / restriction of number of attempts to enter password (1)
- Firewall (1) to prevent unauthorised remote access (1)
- Virus checker (1) to prevent corruption of data (1)
- Use of encryption (1) data coded before storage and/or transmission (1)
- Access levels (1) to allow user a certain level of privilege e.g. read/write, browse, access to operating system etc (1)

Any 2 × (2, 1, 0)**4**

(c)

- Regular changes of password/ prevention of poorly chosen passwords/ staff not allowed to have written copies of password left by equipment (1) to minimise chances of disclosure etc. (1)
- Careful vetting of users (1) before they are allowed user/access rights (1)
- Room/Equipment security measures (1) e.g.....(1)
- Shut down procedures (1) to prevent terminals being left open (1)
- Staff not allowed to bring in Floppy disks/software (1) to prevent importing of viruses/ exporting of data etc. (1)
- Any of the above not mentioned

Any 2 × (2, 1, 0)**4**