

## Mark Scheme

### Important Notice

Mark schemes have been issued on the basis of **one** copy per Assistant Examiner and **two** copies per Team Leader.



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MARK SCHEME

- 1
- Storage that allows reading of professionally produced material (CD ROM drive, DVD)/necessary to input game instructions to her hard drive.
  - Memory stick (floppy disk, CDRW)/ to save her half finished work and transport it to a different machine
  - Colour printer/Inkjet/Bubble jet/to produce hard copy of her work to hand in.
  - Network Card/Modem and phone line/Broadband,ADSL,ISDN/to allow access to internet to facilitate use of e-mail.
- (2 per -, 1 for peripheral, 1 for explanation, max 8) [8]
- 2 a)
- The user is far slower than the processor in making decisions
  - The peripherals are slower than the processor
  - This means that the processor has to wait
- (1 per -, max 2) [2]
- b) Any suitable for batch processing. E.g. Utility bills/bank statements... [1]
- c)
- *Data is prepared off-line/input at speed of peripheral*
  - User is not provided direct access to processor/user is offline
  - Processor services more than 1 peripheral
  - Carried out at off-peak times so that processor time not so important
- (1 per -, max 2) [2]
- 3 a)
- Commissioner is the expert in the field of the problem while the analyst is the expert in what is possible with a computer.
  - Need to ensure that both understand the scale of the solution planned...
  - otherwise a different problem may be solved.
- (1 per -, max 2) [2]
- b)
- Interview/interviewee can think about responses/interviewer can alter questions
  - Questionnaire/large number of people's views can be included in short time
  - Existing documentation/see all the necessary inputs and outputs required for the system/obtain ideas for the formatting.
  - Observation/obtain an unvarnished view of what goes on in present solution.
- (1 per method, 1 for suitable advantage, max 2 methods, max 4) [4]
- c) (i) - Ensures that all users' requirements have been met  
(ii) - Acts as a contract/makes sure analyst is paid. [2]
- d)
- Adjustments in one stage of process may affect inputs necessary to that stage
  - Requirements may alter as design becomes apparent
  - Final stage for any system is obsolescence, therefore new version needs to be produced.
- (1 per -, max 2) [2]

- 4 a) (i) - Deletes everything on surface of disk  
- Divides surface of disk into smaller areas...  
- to allow for storage and recovery of data items.  
(1 per -, max 2) [2]
- (ii) - Scans the files on a computer system/received files...  
- to detect viruses...  
- and remove viruses when they have been detected.  
(1 per -, max 2) [2]
- b) - Provides security measures (passwords/user IDs)/to protect files from unauthorised access/identify user  
- Provides an HCI/to allow communication with user  
- Controls the hardware/to allow data to travel from one part of the system to another.  
- Provides translators/so that software can be converted into form useable by the computer.  
- Manages interrupts/handling requests from external units and prioritising needs.  
(2 per -, max 4) [4]
- 5 a) - Ensuring that data input matches data collected  
- Done by double entry/onscreen techniques. [2]
- b) - Any sensible application needing data to be accurate e.g. inputting details of bank cheques.  
- e.g. because whole application based on accuracy/bank needs to be trusted [2]
- 6 a) 7, 0, 4, (Must be in correct order. If > 3 answers, mark first 3 and deduct 1 for error) [3]
- b) e.g. 4, 6, 3, 7, 1, /Answer is not a whole number  
0, /Can algorithm cope with no input  
4, -6, 3, 7, 1/Can algorithm cope with negative numbers  
4, 6, 6, 6, 6./Can algorithm cope with equal values for B and C  
(1 for sensible data with reason, max 3) [3]
- 7 - Inappropriate sites...  
- generally inappropriate like pornography  
- Specifically inappropriate to that society  
- Danger to structure of society because other views shown...  
- e.g. Hollywood type movies/Make-up/Consumer goods  
- Easy access to consumer goods damaging local traders  
- Everything available on Internet so no need to go out  
- Work can be sent through Internet...  
- changing work practices like socialising  
- Religion undermined because...  
- exposes people to new, contradictory views  
(1per -, max 7) [7]

- 8 a) - The file is all the details of all the cars, it comprises...  
- a number of records, each containing data about a car  
- Each item of data in a record is called a field e.g. price. [3]
- b) - The records are of a predetermined size because...  
- each field is of a fixed size. [2]
- c) - Colour: Characters/Text/String/alphanumeric  
- Engine size: Integer/Real  
- Air Con: Boolean  
- Price: Currency/Real/integer [4]
- 9 a) (i) - Set of application programs...  
- appropriate to many areas  
- with associated documentation,  
(1 per -, max 2) [2]
- (ii) - Parts of package can share data/communicate with others  
- Common layout make use/training easier  
- Includes additional facilities which allow complex tasks to be performed  
(1 per -, max 2) [2]
- b) - File of records of car sales...  
- searched for date = current date  
- Standard form of letter exists...  
- with fields identified...  
- which are completed with reference to data on data fields.  
- Finished letters are then printed ready for sending.  
(1 per -, max 5) [5]
- 10 a) - Geographic distribution  
- Hardware used for communication  
(1 per -, max 1) [1]
- b) (i) - Bit rate is the number of bits transferred in a given time period  
- Word processing uses text files requiring...  
- non time sensitive transfer of data...  
- meaning a small/low bit rate is acceptable.  
- Video is time sensitive...  
- meaning a large/high bit rate is necessary.  
(1 per -, max 4) [4]
- (ii) - Touch sensitive screen...  
- showing list of options...  
- which call up other lists of options  
- limited number of options means ease for user and..  
- security for system  
(1 per -, max 3) [3]
- c) - RSI /ergonomic hardware/regular breaks  
- eyestrain/correctly positioned monitor/anti glare screen/regular breaks  
- radiation/use low radiation monitor/limit time spent at terminal.  
(2 per -, 1 for issue, 1 for measure, max 2-, max 4) [4]

- 11
- Digital (video) camera used to capture photographs (video)...
  - Downloaded (via USB port) to hard drive
  - or photographs are scanned in
  - Photo editing software/Digital video editor used to prepare images
  - Photographs compressed/using JPEG
  - Video compressed/using MPEG
  - Parity/Checksum used to check for errors in transmission. [5]
- (1 per -, max 5)
- 12 a)
- Indexed sequential uses indexes of keys [2]
  - Random access file uses key as input to an algorithm.
- b)
- (i) - Algorithm uses all 6 digits. [2]
  - Algorithm has no more than 10,000 outcomes/Modular division by 10,000 [1]
  - (ii) - Any 2 which hash to same address
  - (iii) - Values that collide are stored sequentially... [1]
  - after end of file/in a bucket
  - Marker applied to correct address to signify further values
- OR – Original address contains pointer...
- which is head of linked list of items...
  - which hash to same value.
- OR – Locations are searched serially
- until free location found
  - value inserted at free location [2]
- (1 per -, max 1 method, max 2)