

Information and Data Test Total: 55

- 1 Banks keep records of customers and their bank accounts. Give one example for each of the following: 2
- (a) data that are recording facts; (1)
 - (b) data that are the result of a transaction (1)

a) Surname, Forename, Date of Birth, Account Number, Branch Number, Post Code. (any 1)
b) Balance of Account, Total Loan amount, Total Deposit amount, Total Withdrawal amount.(1)

- 2 State three characteristics of good quality data.

*e.g. Show understanding of the concepts of **relevance** and method of interpretation to management information needs e.g. On a report all columns are needed, extra columns may confuse*

*Information is only of value if it is highly **appropriate** to need and understandable*

Accurate in level of detail e.g. Senior management report may need to be accurate to nearest 2% but operator level must be 100%, Senior management require a summary report, detailed reports may be in an appendix.

Complete e.g. All information on report required to make decision

User confidence e.g. In source of data and accuracy of report... A cross check against other sources may lead to lack of confidence

To right person e.g. Report given to person who needs to be informed

At right time e.g. Stock report not the day after the stock order

Via correct channel of communication e.g. A report tabled at a formal meeting may be received, an informal distribution may not carry the same effect for the information (or the reverse)

Understandable (right format e.g. Pie chart not column of figures. This may relate to the pr of the person receiving the information

or

Accuracy - Intended use – information intended for a branch manager of a supermarket (1) showing till usage to allow them to allocate staff over a weekly period is used to give the Regional manager a view of the efficiency of the branch. Information not designed for a particular use is usually **irrelevant** or misleading.(1) If the information has been poorly obtained e.g. by using too small a sample or inadequate equipment then only garbage will have been collected (1) and, therefore, there will only be garbage coming out. 6

- 3 Data input to an ICT system can take many forms such as pictures, sounds, numbers and letters. In all cases the data has to be encoded. 2
- a) Using an example, explain why data needs to be encoded.
 - b) Sound can be stored in a computer system. In order to store signals from a microphone in a form that the computer system can use, a special piece of hardware is needed.
 - (i) Give the name of this special piece of hardware. (1)
 - (ii) Describe the way that sound is stored in a computer system. (3)
 - (b) Graphics can also be stored in a computer system. What is meant by **each** of the

following terms?

- (i) Bit-mapped graphics; (1)
- (ii) Vector graphics. (1)
- (c) Give **two** advantages of vector graphics over bit-mapped graphics. (4)
- (d)

Figure 3 shows a directory listing for the sub-directory \My Documents on a PC.

My Documents			
Name	Size	Type	Modified
Home		File Folder	29/09/04
My Pictures		File Folder	27/09/04
My Music		File Folder	11/07/04
Bolero.wav	897	Wave Sound	08/06/00
Fractal.pas	22	Application	18/08/04
HomePage.htm	20	HTML File	21/08/04
Sunrise.jpg	504	JPG File	27/09/04
The boys.bmp	2986	BMP File	13/10/04

Figure 3

- (i) Name the audio file in the above table. (1)
 - (ii) Name the image files. (2)
 - (iii) Give a description of one audio file and one image file listed in the table above, stating an advantage OR disadvantage of using this type of file format. (4)
 - (iv) Name an audio file with 'lossy' format. What does this term mean? (2)
- 17

3a) Data is encoded to allow for quick entry and easy entry and to ensure that valid data is input.

bi) (a) (i) Analogue to Digital Converter; A Sound Card 1

(ii) Stored as a sequence of numeric values; Each value represents amplitude/height/volume of a signal at that moment; Sound sampled regularly; 2

(b) (i) Each pixel represented by a value // image is divided into pixels; R screen 1

(ii) Each graphic / drawn element / shape stored individually; 1

(c) Uses less memory // faster to load / transmit; Does not deteriorate when enlarged; 4

d(i) Bolero.wav 1

(ii) Sunrise.jpg, The boys.bmp 2

(iii) WAV is the standard audio format for Windows, WAV is a flexible file format designed to store more or less any combination of sampling rates or bitrates. It is an adequate file format for storing and archiving an original recording. It has lossless format.

MP3 is a standard coding system using compression techniques that stores the sound files in a smaller space. MP3 can compress a song by a factor of about 10 while keeping close to CD quality.

A bitmap is the binary stored data representing an image. A picture is broken up into thousands of tiny squares called pixels.

The Joint Photographic Experts Group (JPEG) has defined standards for graphical image compression. Data compression techniques are used to minimise the amount of storage space needed for graphical images.

(iv) mp3. It means that even though the file is compressed, allowing for smaller storage space, / it does lose quality. 2

- 4 An organisation pays its employees weekly by transferring money electronically into their bank accounts. Employees are paid different amounts depending on the hours that they have worked on their grade which determines their hourly rate of pay. The company makes use of a payroll program. 6

(a) State:

- (i) two items of data that would need to be input to the payroll program each week for each employee; (2)
(ii) two items of data that would be stored every time the program is run; (2)
(iii) two possible documents output on paper from the payroll program. (2)

(a) (i) Commission Rate, Rate of pay, Tax Rate. (A Personal details) 2

(ii) Number of hours worked, Week number. 2

(iii) Pay Slip, Pay cheque, Company weekly payout, Total tax amounts for Receiver. 2

- 5 Explain, using examples, the following terms as they are applied within ICT: 4

(a) Data (2)

(b) Information (2)

(a) Data are raw facts or figures, or a set of values, facts, figures, measurements, records of transactions(1) example(1) (NOT no processing carried out, no use to anyone, have no meaning NOT single numbers like 12 or 010768)

but

ACCEPT a student's mark or a customer's reading as they contain multiple items. Must be plural for definition & example Not the medium (questionnaire) must be results of.

b) (2,1,0)

Information is data, which has been processed or converted to give it meaning/to give it context/to organise it (1) example (\) Do not accept simple labeling. Must be the result of processing not the event. Not just "given a meaning".

- 6 The expression Garbage in, garbage out, or GIGO, is often used in connection with information processing systems. Explain, using an example, what is meant by this expression? (4) 4

Sample answer might be "the information output from the system will be wrong(1) if the data that is entered into the system is incorrect(1) NOT "information going in".

An example would be if the price of a can of baked beans is entered as 24p when it is really 35p (1) then if a customer buys 3 cans of beans the bill will say 72p instead of £1.05.(1)

Looking for key points of incorrect input gives incorrect output. (2 MARKS EXPLANATION - INPUT OUTPUT + 2 MARKS EXAMPLE - INPUT OUTPUT)

- 7 Travelling sales representatives working in the U.K. can make extensive use of company credit cards to pay for goods and services. A company credit card is one that is issued by a company to its representative. All charges and information relating to each transaction are sent directly to the company. 6

(a) List five items of data which are captured each time the card is used. (5)

(a) Card Number, Card Type, Bank Account Number, Bank Sort Code, Pin Code. 5

(b) Other than payment information, suggest one other potential use for information which can be derived from this data. (2)

(b) Where the company likes to send its Reps to work (area), where they like to stay (type of hotel/cost,) how much they spend on meals, how much they spend on petrol, what size party do they entertain?

7

8 A travel firm arranging package holidays in Spain for the 2001 season uses data obtained from a survey of their customers' favourite holiday resorts in 1997. Explain:

2

a) why the data from 1997 might not be suitable for use to predict the requirements for 2001; (2)

The standard of the resort or accommodation in that area might have gone down or changed in nature and type, and customers might have moved their allegiances to another part of Spain in 4 years. One would have to question whether the old data was for pensioners or for young families.

Total Marks: 55