

**AS Module 1 (I CT1): TOPIC 3.2.2 Information and Data**

1. Describe with the aid of examples, the difference between information and data. **(4 marks)**

*Information is derived data in the context of use. Example: output report of all records matching certain criteria.*

*Data is a value or a set of values. Example all raw records at collecting stage*

2. Encoding information about value judgements as data can have the effect of reducing its accuracy or meaning. This becomes evident when the data is retrieved and used. Explain with the use of two appropriate examples, why this may happen. **(4 marks)**

***Accuracy** - normally a discrete coding forces coarseness e.g. blue/green eyes must be coded as blue or green or tall/small*

***Meaningfulness** depends on the weight given to it by the coder of the information*

3. The manager of a local firm complains that her Information System produces lots of data printed in many different reports but provides little information to enable her to run the business. By using examples from **any specific business application** you have studied describe:

- the difference between information and data
- how to determine the information requirements of the business
- the general characteristics of information that make it valuable to a manager
- at least two alternative ways of presenting information in a usable form and their reasons for use within a particular context. **(20 marks)**

**MARK ALLOCATION**

*note individual max add up to more than 20*

***difference between information and data (4)***

- *information is derived data in the context of use e.g. output report of all records satisfying a certain criteria*
- *data is a value or set of values e.g. all raw records at collection stage*

***how to determine the information requirements of the business (6)***

<i>discussion with end-users</i>	<i>interview</i>
<i>observation</i>	<i>inspection</i>
<i>questionnaires</i>	<i>identify expected outcomes</i>
<i>identify precise problem in IT terms</i>	<i>sub-division of problem into a number of sub-tasks -information flows, tasks performed, files, records, filing sequences, I/O documents</i>

***the general characteristics of information that make it valuable to a manager (8)***

*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*

[Type text]

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*reverse)*

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

**Highlight exceptions** to the expected/norm values

**at least two alternative ways of presenting information in a usable form and their reasons for use within a particular context. (4)**

<i>pie chart</i>	<i>better at showing proportions in relation to whole</i>
<i>line graph</i>	<i>better at showing the trend</i>
<i>exploded pie chart</i>	<i>exaggerates a particular feature</i>
<i>pictogram</i>	<i>aids user understanding if appropriate symbol chosen</i>
<i>columns of figures</i>	<i>better for an accurate record</i>

*presentation/coherence (4)*

4. ‘People remember 20% of what they hear and 30% of what they see, but 40% of what they hear and see.’ Many business organisations are using presentation graphics packages to prepare and present material, often to a large audience.

- describe two major functional features of a presentation graphics package (4)
- describe two different forms of output you would expect the package to produce to enable an effective presentation to be made. (4)

describe one potential problem when displaying IT based information on a computer screen to a large audience, and explain how it can be overcome. (2) **(10 marks)**

**ANSWER**

*outliner facility (1): acts as simple word-processor where paragraphs can be indented/demoted, allows overviews, headings, sub-titles, bullet lists, cut and paste. (2) if sufficient explanation*

*standard graphics - draw an object, rotate, stretch, fill, outline. pattern, effect, layers. cut and paste, replicate etc (2) if sufficient explanation*

*master template (1) to define the look of the presentation, set backgrounds, colour schemes, fonts and sizes (2) if sufficient explanation*

*set of basic drawing/text tools (1): for fitting text to curves, normal drawing tools, blending shapes (2) if sufficient explanation*

*a clip art import facility in a variety of formats (PCX, TIFF, EPS etc)*

*slide shows (1) + explanation of sequencing, timing and slide change effects (1)*

*(b)*

*primary output is final screen image (1). Can be direct to screen or projected via OHP laser copy (handouts to audience) or colour print copies. Slides (35mm) may be produced via bureau*

*speakers notes with additional annotation on each slide  
sound plus expansion*

*(c)*

*cannot see, get a larger one  
OHP overlay projector or multiple screens  
tablet will not handle all modes*

6. What is meant by the term ‘data’? (1)

What is meant by the term ‘information’? (1)

Give an example that clearly shows the difference between ‘data’ and ‘information’ (2)

[Type text]

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7. (a) Information processing is concerned with: (5)

- Input
- Processing
- Output
- Feedback

Briefly describe these **four** elements of information processing, using a diagram to illustrate your answer

- (a) *Input: entails capturing raw data resources from the organisation or from its external environment* *1*  
*Processing: entails converting raw data into a form which is useful.* *1*  
*Output : entails transferring processed information to people who will use it* *1*  
*Feedback: is output that is returned to appropriate members of the organisation to help them refine or correct the input phase (must have both points)* *2*  

**(must have underlined elements in answer)**  
**FEEDBACK**

8. Low quality information can be misleading, distorted or incomprehensible. This type of information is of little value to the decision maker. The output of good quality information is costly and dependent upon many factors.

- (a) Identify **three** factors which affect the *quality* of information. (3)  
(b) State **two** factors which affect the *cost* of providing good quality information. **(5 marks)**

- a) *Any three from each of the following categories:*
- accuracy/precision* *1*
  - recency/ up-to-dateness* *1*
  - frequency of presentation/ timeliness* *1*
  - content/ level of detail/relevance* *1*
- (Any other terms which describe accurate, up-to-date, timely and relevant data are acceptable. There must be one descriptor from each category i.e. do not award two marks for accurate and precise)*

**TO MAX OF 3 MARKS**

- (b) *Any two points from this list:*
- intellectual labour involved in originating and handling it* *1*
- or more specific answers eg:*
- data collection,* *1*
  - data conversion* *1*
  - non human element - storage, processing etc.* *1*
- or more specific answers eg.:*
- data transmission,* *1*
  - complexity of processing reqt,* *1*
  - hardware* *1*
  - reports requests* *1*
- (1 mark for 1 from each category or 1 mark for stating the category itself)*

[Type text]

TO MAX OF 2 MARKS

5

9. State **two** factors that affect the value of information and give an example of each one. (4)

*1 mark stating and one mark for example*

*For example:*

*Accuracy - if the data is inaccurate wrong decisions can be made (1) e.g. ordering too many of an item because the previous weeks sales suggest that the stock is low or demand is high. Inaccurate information has little value.(1)*

*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. Cost (Method of Collection)*

10. With the aid of suitable examples, distinguish between data and information. (4 marks)

***Data** is raw facts or figures or a set of values, facts, figures measurements, records of transactions(1), example(1)*

*no processing carried out, no use to anyone have no meaning as such*

*2 marks*

***Information** is data which has been processed or converted to give it meaning **or** is data in context or data that has been organised( 1) example (1)*

*2 marks*

***NB: Can get the mark for the example, without getting the definition mark***

***Allow meaningful data=Information***

***Examples of Data and Information do not have to be related***

11.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 marks**

*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*

12. Three components of an Information Processing System are input, processing and output. State what is meant by

- Input

[Type text]

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- Processing
- Output

and give an example of each one. **6 marks**

*2 marks, possible to get any of the individual marks*

*Input - capturing data (1) plus example (1)*

*Key words capturing/entering and data for first mark*

*Processing - converting data into information (1) plus example (1)*

*Converting/changing/ordering/giving meaning to data NOT processing*

*Output - information produced (1) plus example (1)*

*Must have information involved for first mark*

13. Explain what is meant by “Information and Communications Technology”. **3 marks**

*Any suitable definition that covers*

- *Input/collection/gathering/ (1)*
- *Processing/manipulation/changing/sort/organise(1)*
- *Storage(1)*
- *Transfer/pass on/send/exchange/shared(1)*
- *Output/accessing/produced/find/find out(1)*

*1 mark for each to maximum of 3 marks*

*ALSO ACCEPT:*

- *Use of computers to do.....certain tasks etc(1)*
- *Use of electronic/computer technologies(1)*
- *Human interaction with a computer(1)*
- *Technology = hardware/examples of hardware(1); Software(1) NOT Trade names*
- *Application of science/computers to everyday tasks(1)*

*Communicate/communications only if example given of how e.g. using the Internet.*

*NOT using new technology to make life easier/better standard of living (Does not infer information)*

14. Low quality information can be misleading, distorted or incomprehensible. This type of information is of little value to the decision maker. The output of good quality information is costly and dependent upon many factors.

- Identify **three** factors which affect the *quality* of information. (3)
- State **two** factors which affect the *cost* of providing good quality information (2)

15. A checkout operator in a supermarket scans the barcodes of items being purchased by customers. The scanner is linked to an Electronic Point of sale (EPOS) system. The software that is used contains functions to look up the prices and descriptions of the products that are scanned in order to produce an itemised receipt for the customer. The software also produces a daily sales summary report for the store manager.

- a. Give **one** item of data that is entered into the EPOS system. **(1 mark)**
- b. Give **two** items of information that are produced by the EPOS system. **(2 marks)**

[Type text]