

## 1 st Lesson

### Basic Concepts : Information and other Related Concepts

Information has long played, in one fashion or another, a key role in society. We are all consumers of Information. “If physically we are what we eat, mentally we must be the Information we have absorbed.” In this section, let us discuss Information and its related concepts such as data and knowledge

#### 1 . Data :

There are numerous definitions of data in the literature.

The concept of data as it is used in the syllabus is commonly referred to as ‘raw’ data – a collection of text, numbers and symbols with no meaning.

Data therefore has to be processed, or provided with a context, before it can have meaning.

“Data: A representation of facts, concepts or instructions in a formalised manner suitable for communication, interpretation, or processing by humans or by automatic means.”

#### Example

- 3, 6, 9, 12
- cat, dog, gerbil, rabbit, cockatoo
- 161.2, 175.3, 166.4, 164.7, 169.3

These are meaningless sets of data. They could be the first four answers in the 3 x table,

alist of household pets and the heights of 15-year-old students but without a context we

## **2.Information :**

It is important that students learn the concept of what 'information' is as used in information technology.

« Information is the result of processing data, usually by computer. This results in facts, which enables the processed data to be used in context and have meaning. Information is data that has meaning ».

## **3. When does data become information?**

Data on its own has no meaning. It only takes on meaning and becomes information when it is interpreted. Data consists of raw facts and figures. When that data is processed into sets according to context, it provides information. Data refers to raw input that when processed or arranged makes meaningful output. Information is usually the processed outcome of data. When data is processed into information, it becomes interpretable and gains significance. In IT, symbols, characters, images, or numbers are data. These are the inputs an IT system needs to process in order to produce a meaningful interpretation.

In other words, data in a meaningful form becomes information. Information can be about facts, things, concepts, or anything relevant to the topic concerned. It may provide answers to questions like who, which, when, why, what, and how. If we put Information into an equation it would look like this:

## Data + Meaning = Information

Example

Looking at the examples given for data:

- 3, 6, 9, 12
- cat, dog, gerbil, rabbit, cockatoo
- 161.2, 175.3, 166.4, 164.7, 169.3

Only when we assign a context or meaning does the data become information. It all becomes meaningful when we are told:

- 3, 6, 9 and 12 are the first four answers in the 3 x table
- cat, dog, gerbil, rabbit, cockatoo is a list of household pets
- 161.2, 175.3, 166.4, 164.7, 169.3 are the heights of 15-year-old students.

### 4. Knowledge :

Knowledge is a familiarity, awareness, or understanding of some one or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning.

#### 4 . 1 : Tacit and Explicit knowledge

##### 4.1.1. Explicit knowledge

Explicit knowledge is that expressed to others, orally or in a recorded form.

##### Tacit knowledge

Tacit knowledge is personale knowledge that may or may not be expressed by an individual.

Generally most people express their personal knowledge up to a point but not beyond for reasons of their own. Sometimes it may be deliberate or sometimes they may not be able to describe their special skill.<sup>1</sup>

## 5. How are data, information and knowledge linked?

If we put Knowledge into an equation it would look like this: **Information + application or use = Knowledge**

Example Looking at the examples given for data:

- 3, 6, 9, 12
- cat, dog, rabbit, cockatoo
- 161.2, 175.3, 166.4, 164.7, 169.3 Only when we assign a context or meaning does the data become information. It all becomes meaningful when we are told:
  - 3, 6, 9 and 12 are the first four answers in the 3 x table
  - cat, dog, gerbil, rabbit, cockatoo is a list of household pets
  - 161.2, 175.3, 166.4, 164.7, 169.3 are the heights of the five tallest 15-year-old students in a class.

If we now apply this information to gain further knowledge we could say that:

- 4, 8, 12 and 16 are the first four answers in the 4 x table (because the 3 x table starts at three and **goes up** in threes the 4 x table must start at four and go up in fours)
- The tallest student is 175.3cm.
- A lion is not a household pet as it is not in the list and it lives in the wild.

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<sup>1</sup>Mohanlal Sukhadia, KNOWLEDGE: DEFINITION, TYPES, NATURE, PROPERTIES AND SCOPE, on line, [https://www.mlsu.ac.in/econtents/414\\_Unit-4%20KNOWLEDGE.pdf](https://www.mlsu.ac.in/econtents/414_Unit-4%20KNOWLEDGE.pdf) 74