1.1 INTRODUCTION – PAGE 5: QUESTIONS 2 TO 4

2. What is information technology?

Information technology refers to the electronic hardware and software used to process information.

3. How has digital communication improved the transfer of data?

Developments in digital communication have increased our ability to transfer data. Local area networks (LANs) allow computers to communicate information and share resources. Global communication is routinely achieved using the Internet.

4. What has been the impact of information technology on organizations?

Organisations have used information technology to save time, reduce effort, increase output, develop new products and ultimately save money.

1.2 INFORMATION SYSTEMS IN CONTEXT – PAGE 11: QUESTIONS 1 TO 8

1. What is an information system?

An information system has a number of characteristics: It has a particular purpose. It exists in a particular environment. It performs the information processes of collecting, organising, analysing, storing and retrieving, processing, transmitting and receiving, and displaying. It involves participants (people), data and information, and information technology.

2. List the elements of an information system.

Information systems have a purpose, which means they address the needs of a group or an individual. The environment is everything that influences or is influenced by an information system and its purpose.

3. Outline one reason for the environment of an information system to change.

One of the main reasons for the environment to change is the progress in information technology.

4. List the five functions of hardware.

Input involves entering data into the computer. Processing changes data to produce information by following a series of instructions. Storage involves retaining data over a period of time. Control coordinates the operations of input, processing, output and storage. Output involves the presentation or display of information to a person, or the transfer of data to another computer.

5. What function is performed by the CPU?

The control unit is part of the CPU. The control unit is the 'organiser' that directs the flow of data in the computer in the same way as traffic lights control the flow of cars at an intersection.

6. What part of the computer coordinates the operations of the input, processing, output and storage?

Control coordinates the operations of input, processing, output and storage.

7. Describe four different types of computers.

A personal computer (PC, also known as a microcomputer) is a single-user computer that generally sits on a desktop. A midrange computer or minicomputer is a central computer that performs the processing for a number of users working at terminals. A mainframe computer is a central computer for a large number of users. A supercomputer is the fastest, most powerful and expensive type of computer.

8. How is system software different from application software?

Application software is a computer program used for a specific task. System software manages and controls the hardware so the application software can perform the required task.

1.3 INFORMATION PROCESSES – PAGE 17: QUESTIONS 1 TO 5 AND 8 TO 11

1. Describe how information was processed 50 years ago.

Fifty years ago, sorting, finding and comparing information was all done manually.

2. List the seven information processes.

Collecting (is a process that involves four steps: defining the required data—deciding what data is needed, identifying the source of the data—where the data can be found, determining how the data will be gathered— what tools will be required, gathering the data—collecting and entering, the data into the information system). Organising is the process that arranges, represents and formats data for use by other information processes. Analysing is the process that interprets data, transforming it into information. Storing and retrieving is a two-step process for retaining data: storing saves data for later use; retrieving obtains data that has been previously saved. Processing is the manipulation of data and information. Transmitting and receiving is the transfer of data within and between information systems. Displaying is the presentation of information from an information system.

3. Describe the steps involved in the collection of data.

Collecting (is a process that involves four steps: defining the required data—deciding what data is needed, identifying the source of the data—where the data can be found, determining how the data will be gathered— what tools will be required, gathering the data—collecting and entering, the data into the information system).

4. List some of the techniques used to collect primary data.

A primary source refers to data that is collected first-hand. Many organisations prefer to generate their own primary data because they consider it meaningful and reliable, although it is time-consuming and costly. Data from primary sources is acquired by interviewing people, conducting surveys and questionnaires, or observing a system in operation

5. Why is the format of data important to its organisation?

When developing an information system it is essential to determine the format in which the data will be represented. The format of the data determines the most appropriate software application and the processing that can be carried out.

8. Describe a processor.

A processor consists of millions of electrical components located on a thin silicon wafer called an integrated circuit or silicon chip.

9. How is the speed of a processor measured?

The speed of a processor is measured in megahertz (MHz) and is called its clock speed.

10. Explain the difference between serial and parallel transmission.

Parallel transmission is the transmission of pieces of data simultaneously using separate lines. Serial transmission is the transmission of pieces of data one after the other. Serial transmission is used with many peripheral devices, such as mice, keyboards, modems and plotters. Parallel transmission is used for most printers.

11. What is hand-shaking?

For data and information to be exchanged between information systems, compatible communication settings are required. This is referred to as handshaking. Communication settings include baud rate, parity and file transfer protocol.