CBSE CLASS 11 ACCOUNTANCY

FINANCIAL ACCOUNTING-2

REVISION NOTES

CHPATER-12

APPLICATIONS OF COMPUTERS IN ACCOUNTING

➢ Meaning and Elements of Computer System

A computer is an electronic device, which is capable of performing a variety of operations as directed by a set of instructions. This set of instructions is called a computer programme. A computer system is a combination of six elements:

- **Hardware**

  Hardware of computer consists of physical components such as keyboard, mouse, monitor and processor. These are electronic and electromechanical components.

- **Software**

  A set(s) of programmes, which is used to work with such hardware is called its software. A coded set of instructions stored in the form of circuits is called firmware. There are six types of software as follows:

1) **Operating System:** An integrated set of specialised programmes that are meant to manage the resources of a computer and also facilitate its operation is called operating system.

2) **Utility Programmes:** These are a set of computer programmes, which are designed to perform certain supporting operations: such as programme to format a disk, duplicate a disk, physically reorganise stored data and programmes.

3) **Application Software:** These are user oriented programmes designed and developed for performing certain specified tasks: such as payroll accounting, inventory accounting, financial accounting, etc.

4) **Language Processors:** These are the software, which check for language syntax and eventually translate (or interpret) the source programme (that is a programme written in a computer language) into machine language (that is the language which the computer understands).

5) **System Software:** These are a set of programmes which control such internal functions as reading data from input devices, transmitting processed data to output devices and also checking the system to ensure that its components are functioning properly.

6) **Connectivity Software:** These are a set of programmes which create and control a connection between a computer and a server so that the computer is able to communicate and share the resources of server and other connected computers.

- **People**

  People interacting with the computers are also called live-ware of the computer system. They constitute the most important part of the computer system:

1) System Analysts are the people who design data processing systems.

2) Programmers are the people who write programmes to implement the data processing system design.

3) Operators are the people who participate in operating the computers. People who respond to the procedures instituted for executing the computer programmes are also a part of live-ware.

- **Procedures**

  The procedure means a series of operations in a certain order or manner to achieve desired results. There are three types of procedures which constitute part of computer system: hardware-oriented, software-oriented and internal procedure. Hardware–oriented procedure provide details about components and their method of operation. The software-oriented procedure provides a set of instructions required for using the software of computer system. Internal procedure is instituted to ensure smooth flow of data to computers by sequencing the operation of each sub-system of overall computer system.

- **Data**

  These are facts and may consist of numbers, text, etc. These are gathered and entered into a computer system. The computer system in turn stores, retrieves, classifies, organises and synthesises the data to produce information according to a pre-determined set of instructions. The data is, therefore, processed and organised to create information that is relevant and can be used for decision making.

- **Connectivity**

  It is being acknowledged as a sixth element of the computer system. The manner in which a particular computer system is connected to others say through telephone lines, microwave transmission, satellite link, etc. is the element of connectivity.

➢ **Capabilities of Computer System**

A computer system possesses some characteristics, which, in comparison to human beings, turn out to be its capabilities. These are as follows:

1) **Speed:** It refers to the amount of time computers takes in accomplishing a task or completes an operation. Computers require far less time than human beings in performing a task.

2) **Accuracy:** It refers to the degree of exactness with which computations are made and operations are performed.

3) **Reliability:** It refers to the ability with which the computers remain functional to serve the user. Computers systems are well-adapted to performing repetitive operations. They are immune to tiredness, boredom or fatigue.

4) **Versatility:** It refers to the ability of computers to perform a variety of tasks: simple as well as complex. Computers are usually versatile unless designed for a specific application.

5) **Storage:** It refers to the amount of data a computer system can store and access. The computer systems, besides having instant access to data, have huge capacity to store such data in a very small physical space.

- **Limitations of a Computer System**

In spite of possessing all the above capabilities, computers suffer from the following limitations:

1) **Lack of Commonsense:** Computer systems as on date do not possess any common sense because no full-proof algorithm has been designed to programme common sense.

2) **Zero IQ:** Computers are dumb devices with zero Intelligence Quotient (IQ). They cannot visualise and think what exactly to do under a particular situation, unless they have been programmed to tackle that situation.

3) **Lack of Decision-making:** Decision-making is a complex process involving information, knowledge, intelligence, wisdom and ability to judge. Computers cannot take decisions on their own because they do not possess all the essentials of decision-making.

➢ **Components of Computer**

The functional components of computer system consist of Input Unit, Central Processing System and Output Unit. The way these components are embedded in a computer may differ from one architectural design to another, yet all of them constitute the essential building blocks of a computer system. Diagrammatically, these components may be presented as follows:

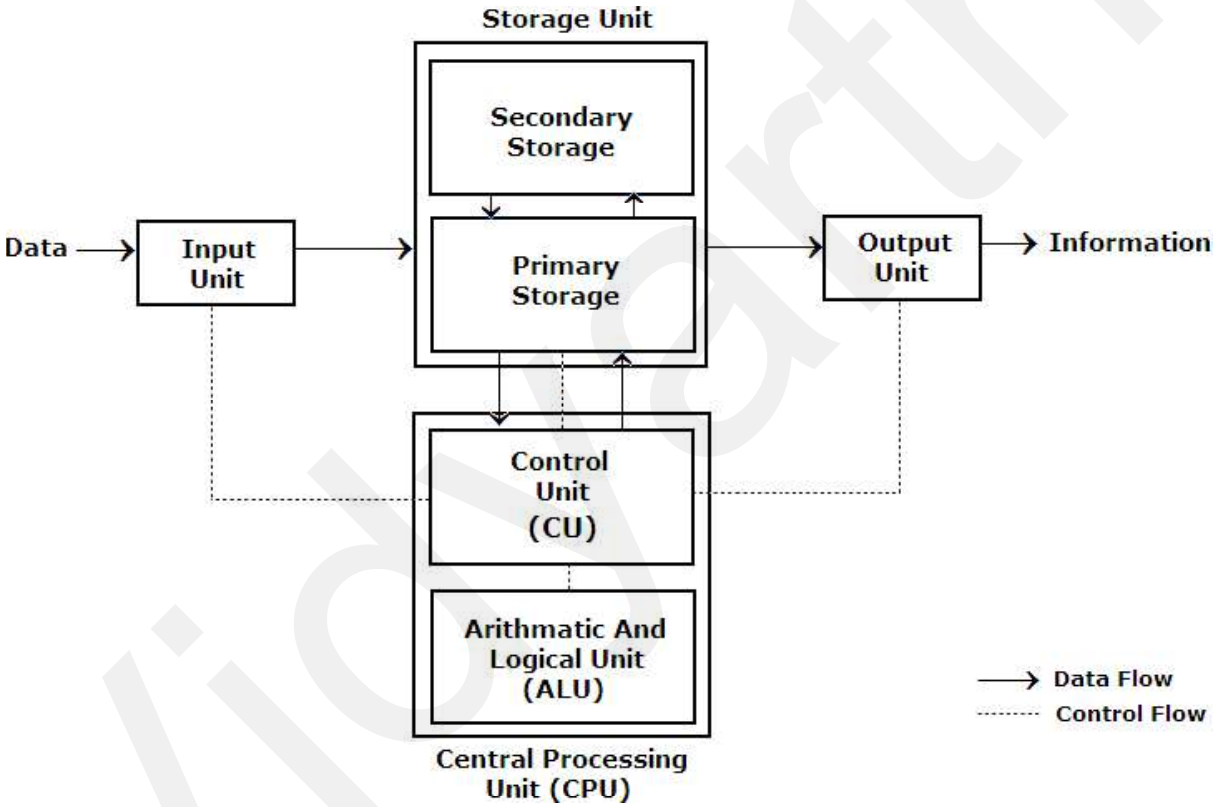

Fig: Block diagram of main components of computer

- **Input Unit**

It controls various input devices which are used for entering data into the computer system. Keyboard and Mouse, for instance, are the most commonly used input device.

- **Central Processing Unit (CPU)**

  This is the main part of computer hardware that actually processes data, according to the instructions it receives. It controls the flow of data by directing the data to enter the system, places the data into its memory, retrieves the same as and when needed and directs the output of data according to a set of stored instructions. It has three main units as described below:

1) **Arithmetic and Logic Unit (ALU):** It is responsible for performing all the arithmetic computations such as addition, subtraction, division, multiplication and exponentiation.

2) **Memory Unit:** In this unit, data is stored before being actually processed. The data so stored is accessed and processed according to a set of instructions which are also stored in the memory of the computer well before such data is transmitted to the memory from input devices.

3) **Control Unit:** This unit is entrusted with the responsibility of controlling and coordinating the activities of all other units of the computer system.

- **Output Unit**

  After processing the data, the information produced according to a set of instruction need to be made available to user in a human readable and understandable form. A computer system, therefore, needs an output device to communicate such information to the user. Essentially, the output device is assigned the task of translating the processed data from machine coded form to a human readable form. The commonly used output devices include: external devices like monitor also called Visual Display Unit (VDU).

➢ **Evolution of Computerised Accounting**

With substantial increase in the number of transactions, the technology advanced further. With exponential increase in speed, storage and processing capacity, newer versions of these machines evolved. A computer to which they were connected operated these

machines. The success of a growing organisation with complexity of transactions tended to depend on resource optimisation, quick decision-making and control. As a result, the maintenance of accounting data on a real-time (or spontaneous) basis became almost essential. Such a system of maintaining accounting records became convenient with the computerised accounting system.

- **Transaction Processing System**

  Transaction Processing Systems (TPS) are among the earliest computerised systems catering to the requirements of large business enterprises. The purpose of a typical TPS is to record, process, validate and store transactions that occur in the various functional areas of a business for subsequent retrieval and usage. TPS involves following steps in processing a transaction. In order to understand these steps, let us consider a case wherein a customer withdraws money using the Automated Teller Machine (ATM) facility, as described below:

1) **Data Entry:** The action data must be entered into the system before it is processed. There are a number of input devices to enter data: Keyboard, mouse, etc.

2) **Data Validation:** It ensures the accuracy and reliability of input data by comparing the same with some predetermined standards or known data. This validation is performed by error detection and error correction procedures.

3) **Processing and Revalidation:** The processing of data, representing actions of the ATM user, occurs almost instantaneously in case of the Online Transaction Processing (OLTP) system provided a valid data representing actions of the user has been encountered. This is called check input validity. Revalidation occurs to ensure that the transaction in terms of delivery of money by ATM has been completed. This is called check output validity.

4) **Storage:** Processed actions, as described above, culminate into financial transaction data, which describe the withdrawal of money by a particular customer, are stored in transaction database of Computerised personal banking system.

5) **Information:** The stored data is processed using the query facility to produce desired information. A database supported by DBMS is bound to have standard Structured Query Language (SQL) support.

6) **Reporting:** Finally, reports can be prepared on the basis of the required information content according to decision usefulness of report.

- **Features of Computerised Accounting System**

Typicaly computerised accounting system offers the following features:

1) Online input and storage of accounting data.

2) Printout of purchase and sales invoices.

3) Logical scheme for codification of accounts and transactions. Every account and transaction is assigned a unique code.

4) Grouping of accounts is done from the very beginning.

5) Instant reports for management, for example – Aging Statement, Stock Statement, Trial Balance, Trading and Profit and Loss Account, Balance Sheet, Stock Valuation, GST, Returns, Payroll Report, etc.

- **Management Information System (MIS)**

A management information system (MIS) is a system that provides the information necessary to take decisions and manage an organisation effectively. MIS is supportive of the institution's long-term strategic goals and objectives. MIS is viewed and used at many levels by management:

1) Operational

2) Tactical
3) Strategic

- **Accounting Information System (AIS)**

  Accounting Information System (AIS) identifies, collects, processes, and communicates economic information about an entity to a wide variety of users. Such information is organised in a manner that correct decisions can be based on it.

  Every accounting system is essentially a part of the Accounting Information System (AIS) which, in turn is a part of the broader system, viz. the organisation's Management Information System.

- **Designing of Accounting Reports**

  Data when processed becomes information. When the related information is summarised to meet a particular need, it is called as a report. The content and design of the report is expected to vary depending upon the level to which it is submitted and decision to made on the basis of the report.

  A report must be effective and efficient to the user and should substantiate the decision-making process. Akin to any report, every accounting report must be able to fulfil the following criterion:

1) Relevance
2) Timeliness
3) Accuracy
4) Completeness
5) Summarisation

- **Data Interface between the Information System**

  Accounting information system is important component of the organisational MIS in an organisation. It receives information and provides information to the other functional

MIS. The following examples illustrate the relationship and data interface between the various sub-components of MIS.

I. Accounting Information System, Manufacturing Information System and Human Resource Information System

The manufacturing department receives the list of workers from the Human Resource (HR) department. It sends the details of production achieved by the workers on the basis of which the HR department to the finance and accounts (F&A) department to pay the wages. The details of the wages paid and statutory dues are also send by the F & A department to the production department also to the HR department to monitor the performance of workers. The HR department communicates to the other departments about the good/bad performance on the basis decision on various operational matters may be taken.

II. AIS and Marketing Information System

Consider the business process in the Marketing and Sales department involving the following activities:

1) Inquiry
2) contact creation
3) entry of orders
4) dispatch of goods
5) billing to customers

The accounting sub-system's transaction cycle include the processing of sales orders, credit authorisation, custody of the goods, inventory position, shipping information, receivables, etc. It also keeps a track of the customer accounts, e.g. Aging Report, which should be generated by the system.

III. AIS and Manufacturing Information System

Similarly, business process in the production department may involve the following activities:

1) preparation of plans and schedules

2) issue of material requisition forms and job cards
3) issue of inventory
4) issue of orders for procurement of raw materials
5) handling of vendors invoices
6) payments to vendors

The accounting sub-system transaction cycle would therefore include the processing of purchase orders, advance to suppliers/vendors, inventory status updation, account payable, etc. All of this information has to share with the other MIS in the organisation.

Hence, the computerised accounting system as a sub component of the accounting information system transforms the financial data into meaningful information and communicates the information to the decision-makers. The report demanded may be routine or specific ones.