

## Lecture –1

1. What type of computers work on continuous variables like waves of the signal, their amplitude, etc.?

- a) Digital Computers
- b) Analogue Computers
- c) Hybrid Computers
- d) Server Computers

**Correct Answer: b) Analogue Computers**

2. Which of the following is NOT a type of keyboard?

- a) QWERTY keyboard
- b) AZERTY keyboard
- c) DVORAK keyboard
- d) JOHNSON keyboard

**Correct Answer: d) JOHNSON keyboard**

3. What is a digitizing tablet used for?

- a) Gross movement input
- b) Precision work input
- c) Memory storage
- d) Processing data

**Correct Answer: b) Precision work input**

4. Which of the following is NOT a type of locator device?

- a) Keyboard
- b) Mouse
- c) Digitizing tablet
- d) Joystick

**Correct Answer: a) Keyboard**

5. What is a Laptop computer also known as?

- a) Desktop
- b) Hand-held Computers/Palmtop
- c) Notebook computers
- d) Minicomputers

**Correct answer: c) Notebook computers**

6. Which of the following is NOT a limitation of palmtop computers?

- a) Small size
- b) Lack of disk drives
- c) Limited computing power
- d) Large screen size

**Correct answer: d) Large screen size**

**Computer Architecture and Organization**

7. Which of the following is a characteristic of a minicomputer?

- a) Single user support
- b) Low cost
- c) Mid-range computing power
- d) Limited to specific applications

**Correct answer: c) Mid-range computing power**

8. Which of the following is NOT an example of an input device?

- a) Keyboard
- b) Digitizing tablet
- c) Light pen
- d) Monitor

**Correct answer: d) Monitor**

True or False

1. Is a computer an electronic device that can accept data, process it according to specified rules, produce information, and store the information for future use?
2. Are digital computers those that work on continuous variables like waves of the signal, their amplitude, etc.?
3. Is a mainframe the smallest single user computer and its CPU a microprocessor?
4. Is a light pen a pen-like light-sensitive device that feeds a narrow electrical pulse generated by a pointing device directed towards the screen?

**Answers:**

1. **True**
2. **False (Analogue computers)**
3. **False (microcomputers)**
4. **True**

1. Is a workstation a type of personal computer?
2. Can an output device convert data into computer acceptable form?
3. Is a digitizing tablet a type of on-line data entry device?
4. Is a laser scanner/barcode reader a source data entry device?

**Answers:**

1. **True**
2. **False (input devices)**
3. **True**
4. **True**

### Explanation Questions

1. What is a computer and what are its main functions?
2. How does a server computer differ from a desktop computer?
3. What are the characteristics and uses of a minicomputer?
4. What is a supercomputer and what are some examples?
5. What is a keyboard and what are its common uses?
6. How does a trackball differ from a mouse?
7. What is a digitizing tablet and how is it used?
8. What are pick devices and what are some examples?
9. What is a light pen and how is it used?
10. How do touch screens work and where are they commonly used?
11. What are source data entry devices and how do they increase efficiency?

**Answers:**

- 1. A computer is an electronic device that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.**
- 2. A server computer runs a network of computers and handles the sharing of equipment like printers and the communication between computers on the network. It requires more power, larger memory, larger storage capacity, and high speed communications compared to a desktop computer.**
- 3. A minicomputer is a multiuser computer capable of supporting up to hundreds of users simultaneously. It is more powerful compared to microcomputers and is used for multiusers and interactive applications.**
- 4. A supercomputer is a large, fast, and expensive computer used for massive data processing and solving complex problems like weather forecasting and weapons research. Examples include Eka, PARAM, CRAY 3, and HITAC S-300.**
- 5. A keyboard is the most common input device and is used for a wide range of tasks, including entering data from paper documents, typing letters and memos, and using word processing software.**
- 6. A trackball is a movable ball mounted on top of a stationary base that can be rotated manually using a finger, while a mouse is a handheld device that is moved across a surface to control the movement of the cursor on the screen.**
- 7. A digitising tablet is an electronic plastic board used in Computer Aided Designing (CAD) for designing buildings, cars, mechanical parts, robots, etc. and in the Geographical Information System for digitising of maps.**
- 8. Pick devices are used to select an object on the screen, such as text or graphics. Examples include light pens and touch screens.**
- 9. A light pen is a pen-like light-sensitive device that feeds a narrow electrical pulse generated by a pointing device directed towards the screen. It is used for Computer Aided Designing (CAD) and drawing purposes, as well as reading bar codes from products.**
- 10. Touch screens are monitors on which the user makes selections by touching the screen, rather than moving a cursor with external locator devices. They are often used in situations where users are likely to have a low level of competence in using computer keyboards.**
- 11. Source data entry devices, such as laser scanners/barcode readers, increase efficiency by entering data directly from the source, without any human intervention.**

**Computer Architecture and Organization**

1. What is the main advantage of tower models of desktop computers?
2. What is a PDA and what was its pioneer?
3. What is a workstation and what are its usual applications?
4. What are the two types of on-line or direct data entry devices?

**Answers:**

- 1. The main advantage of tower models of desktop computers is that there are fewer space constraints, which makes installation of additional storage devices easier.**
- 2. A PDA (Personal Digital Assistant) is a hand-held device that combines computing, telephone, fax, and networking features. It can function as a cellular phone, fax sender, and personal organizer. It was pioneered by Apple, which introduced the Newton Message Pad in 1993.**
- 3. A workstation is a powerful, single-user computer with a more powerful microprocessor and a higher quality monitor. It is used in computer-aided design and other applications requiring a high-end, usually expensive, machine with considerable calculating or graphics capability.**
- 4. The two types of on-line or direct data entry devices are keyboard and locator devices.**

### Computer Architecture and Organization

1. What is a computer and what are its main functions?
2. What is a laptop and how does it differ from a hand-held computer/palmtop?
3. What is a server and what are its requirements?
4. What are some examples of super computers and why are they used?
5. Describe two locator devices and their functions.
6. What is a pick device and give an example.
7. What is a source data entry device and give an example.

#### Answers:

**1. A computer is an electronic device that operates under the control of instructions stored in its own memory. It can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.**

**2. A laptop is a small, portable computer that is small enough to sit on the lap. A hand-held computer/palmtop is smaller than a laptop and is so small that it fits in a palm. Most palmtop computers do not include disk drives and are severely limited in functionality compared to full-size computers.**

**3. A server is a computer that runs a network of computers and handles the sharing of equipment like printers and the communication between computers on the network. It requires more power, larger memory, larger storage capacity, and high speed communications than a desktop computer.**

**4. Some examples of super computers include the IBM Blue Gene/Q, the Cray XC40, and the Fujitsu K computer. They are used for scientific research, weather forecasting, and other data-intensive tasks that require high levels of processing power.**

**5. Two locator devices are the mouse and the trackball. A mouse is a small hand-held device used to indicate a position or movement on a computer's display screen by rolling it over a mouse pad/flat surface. A trackball is a movable ball mounted on top of a stationary base that can be rotated manually using a finger. It has two buttons like a mouse for performing operations similar to a mouse.**

**6. A pick device is a device used to select an object on the screen, such as text or a graphic. An example of a pick device is a light pen.**

**7. A source data entry device is a device that helps enter data directly from the source, without any human intervention. An example of a source data entry device is a laser scanner/barcode reader, which is commonly used in grocery stores to automatically enter the product code and retrieve the corresponding price of the product.**

**Fill the blanks with a suitable and correct answers:**

- 1- The most common input device is the keyboard The modern keyboard generally contains ..... and called .....

**Answer 104 keys and called QWERTY**

- 2- There are an Interactive Input Devices and are classified as ....., ..... and .....

**Answer (a)Keyboard, (b) Locator devices (c) Interface or pick devices.**

- 3- ..... computers are combination of good features of analogue and digital computers Digital counterparts convert the analogue signals to perform Robotics and other Process Control Hybrid

**Answer Hybrid.**

- 4- Servers would need to be somewhat more capable than a desktop computer It would need ....., ....., ..... And .....

**Answer: - more power, larger memory, larger storage capacity and high speed communications**

- 5- .....are also known as mid-range computers as their cost and computing powers lie in the middle range between micro and mainframe computers

**Answer: - Minicomputers**

Or

- 6- Minicomputers are also known as mid-range computers as their ..... And .....lie in the middle range between micro and mainframe computers

**Answer: - cost and computing powers**

- 7- The processing speed of super computers lies in the range ..... million instructions per sec (MIPS)

**Answer: - 400 to 10000**

- 8- In order to accomplish a particular task, the Hardware performs a series of jobs, namely, Input, Storage, Processing and Output, which it handles in a very special way as follows: -

**Answer: -**

### Computer Architecture and Organization

- It accepts the data (from the user The computer has memory chips, which are designed to hold data until it is needed)
- It processes this data into information The computer has an electronic brain called the Central Processing Unit, which is responsible for processing all data into information according to the instructions given to the computer
- It then returns the processed information to the user