

## CHAPTER 1 – INTRODUCTION TO COMPUTERS

### POSSIBLE ONE WORDS:

1. **Computers** are seen everywhere around us, in all spheres of life.
2. **Charles Babbage** is considered to be the father of computer, for his invention and the concept of **Analytical Engine in 1837**.
3. **Abacus** is the first known calculating device.
4. There are **six** generations of computers.
5. First Generation Computers - **ENIAC , EDVAC , UNIVAC 1**
6. EDVAC is expanded as **Electronic Discrete Variable Automatic Computer**
7. IBM is expanded as **International Business Machine**.
8. **ENIAC** weighed about **27 tons**, size **8 feet × 100 feet × 3 feet** and consumed around **150 watts** of power.
9. First operating system developed in the 2<sup>nd</sup> generation is **Batch Processing and Multiprogramming Operating System**.
10. Second Generation Computers **IBM 1401, IBM 1620, UNIVAC 1108**
11. ENIAC is expanded as **Electronic Numerical Integrator And Calculator**.
12. UNIVAC is expanded as **Universal Automatic Computer**.
13. Third Generation Computers **IBM 360 series, Honeywell 6000 series**.
14. VLSI is expanded as **Very Large Scale Integrated Circuits**.
15. **Portable** Computers were introduced in the **fourth generation**.
16. **Assembly language** was introduced in the **second generation**.
17. ULSI is expanded as **Ultra Large Scale Integration**.
18. Introduction of **Artificial Intelligence** and **Expert Systems** were introduced in the **fifth generation**.
19. NLP is expanded as **Natural Language Processing** which will be introduced in the **sixth generation**.
20. ENIAC was invented by **J. Presper Eckert and John Mauchly** at the University of **Pennsylvania**.
21. **ENIAC** was the **first digital computer** because it was fully functional.
22. **NLP** provides the ability to develop the computer program to understand human language.
23. **Optical Character Recognition** or **Optical Grapheme Recognition** engine for the Indus Scripts has been developed using **Deep Learning Neural Networks**.
24. **Deep Learning Neural Networks** is a sub-field of AI.

25. There are totally **417** Symbols/Graphemes/ Characters in the Indus Scripts and just **3700+** text inscriptions of data for the machine to learn and attain expert-level status.
26. The term “computer” is derived from the word “**compute**” which means to **calculate**.
27. **Data** is defined as an **unprocessed collection of raw facts**, suitable for communication, interpretation or processing.
28. **Information** is a collection of facts from which conclusions may be drawn.
29. **Information** is also called as processed facts.
30. A **Computer** is an electronic device that takes raw data (unprocessed) as an **input** from the user.
31. Set of instructions are called as **programs**.
32. The **computer** is the combination of hardware and software.
33. **Hardware** is the **physical component** of a computer.
34. The **physical components** are motherboard, memory devices, monitor, keyboard.
35. **Software** is the set of programs or instructions.
36. Every task given to a computer follows IPO cycle expanded as **Input- Process- Output**.
37. The **memory** unit holds the data and instructions during the processing.
38. **Input** unit is used to feed any form of data to the computer, which can be stored in the memory unit for further processing.
39. **CPU** is the major component which interprets and executes software instructions.
40. **CPU** is the **brain** of the computer and expanded as **Central Processing Unit**.
41. CPU has **three** major components.
42. ALU expanded as **Arithmetic and Logic Unit** performs **arithmetic operations** such as addition, subtraction, multiplication, division and **logical operations**.
43. The logical operations of ALU promote the **decision-making ability** of a computer.
44. The **control unit** controls the flow of data between the CPU, memory and I/O devices.
45. **Output Unit** is any hardware component that conveys information to users in an understandable form.
46. The **Memory Unit** is of **two types** which are **primary** memory and **secondary** memory.
47. The **primary memory** is used to temporarily store the programs and data when the instructions are ready to execute.
48. The **secondary memory** is used to store the data permanently.

49. The **primary** memory is also called as a **volatile** memory.
50. RAM expanded as **Random Access Memory** is an example of **main memory**.
51. The **secondary** memory is called as **non-volatile** memory.
52. **Hard disk, CD-ROM and DVD ROM** are examples of **secondary** memory.
53. **Keyboard** is the most common input device.
54. The individual keys for letters, numbers and special characters are collectively known as **character keys**.
55. **Mouse** is a pointing device used to control the movement of cursor on the display screen.
56. Mechanical mouse was developed and introduced by **Telefunken, German Company, 02/10/1968**
57. Optical Mouse has **three** buttons.
58. In **1988, Richard Lyon and Steve Krish** independently invented different versions of Optical Mouse.
59. **Laser Mouse** is highly sensitive and able to work on any hard surface
60. The computer mouse was invented and developed by **Douglas Engelbart**.
61. **Scanners** are used to enter the information directly into the computer's memory.
62. **Scanners** work like Xerox machine.
63. **Finger print Scanner** is a fingerprint recognition device used for computer security.
64. Finger print Scanners and Retinal scanners uses **biometric** technology.
65. **Track ball** is similar to the upside- down design of the mouse.
66. **Retinal Scanner** uses unique patterns on a person's retinal blood vessels.
67. **Light pen** is a pointing device shaped like a pen and is connected to monitor.
68. Light pens have the advantage of '**drawing**' directly onto the screen.
69. **Optical Character Reader** is a device which detects characters printed or written on a paper with OCR, a user can scan a page from a book.
70. **Bar code** is a pattern printed in lines of different thickness.
71. QR code expanded as **Quick Response Code** is the **two dimension** bar code which can be read by a **camera** and processed to interpret the image.
72. **Microphone** serves as a voice Input device.
73. **Digital camera** captures images / videos directly in the digital form.
74. **Digital camera** uses CCD expanded as **Charged Coupled Device** electronic chip.
75. **Touch screen** is a display device that allows the user to interact with a computer by using the finger.

**76. GUI is expanded as Graphical User Interface.**

**77. Keyer** is a device for signaling by hand, by way of pressing one or more switches.

**78. A keyer** differs from a keyboard, which has "no board", but the keys are arranged in a **cluster**.

**79. Monitor** is the most commonly used output device to display the information.

**80.** Pictures on a monitor are formed with picture elements called **Pixel**.

**81. Monochrome** monitors are mostly black and white screens.

**82.** CRT is expanded as **Cathode Ray Tube**.

**83.** LCD is expanded as **Liquid Crystal display** and LED is expanded as **Light Emitting Diode**.

**84.** VGA is expanded as **Video Graphics Array**.

**85.** The first computer monitor was part of the **Xerox Alto computer system**, which was released on **March 1, 1973**.

**86. Plotter** is an output device that is used to produce graphical output on papers.

**87. Printers** are used to print information on the paper.

**88.** There are **two** types of printers; they are **impact and non -impact**.

**89. Impact printers'** print with striking of hammers or pins on ribbon.

**90. Dot matrix and Line matrix printers** are examples of impact printers.

**91. Dot matrix printer** that prints using a fixed number of pins or wires. Each dot is produced by a tiny metal rod, also called a **"wire" or "pin"**.

**92.** The printing speed of dot matrix printers varies from **30 to 1550 CPS**

**93.** CPS is expanded as **Character Per Second**.

**94. Line printers** are capable of printing much more than **1000 Lines Per Minute**, resulting in **thousands of pages per hour**.

**95. Non-impact printers** use electrostatic or laser technology.

**96.** DPI is expanded as **Dots Per Inch**.

**97.** The available resolution range for laser printer is around **1200 dpi**. It can print **100 PPM**.

**98.** PPM is expanded as **pages per minute**.

**99. Inkjet Printers** use colour cartridges which combined **Magenta, Yellow and Cyan** inks to create color tones.

**100.** The speed of Inkjet printers generally range from **1-20 PPM**.

**101.** An **Inkjet printer** can spread **millions** of dots of ink at the paper every **single second**.



102. **Speakers** produce voice output (audio).
103. Using speaker along with **speech synthesizer software**, the computer can provide voice output.
104. **Multimedia projectors** are used to produce computer output on a big screen. These are used to display presentations in meeting halls or in classroom.
105. **Operating system** is a basic software that makes the computer to work.
106. POST is expanded as **Power on Self-Test**.
107. BIOS is expanded as **Basic Input and Output System**
108. If these devices are ready, then the BIOS gets executed. This process is called **Bootting**.
109. A program called "**Bootstrap Loader**" transfers OS from hard disk into the main memory.
110. Booting is of **two** types, they are **cold** and **warm** booting.
111. When the system starts from initial state i.e. it is switched on, we call it **cold booting or Hard Booting**.
112. When the system restarts or when Reset button is pressed, we call it **Warm Booting or Soft Booting**.

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