CHRIST THE KING BOYS MATRIC HR. SEC. SCHOOL, KUMBAKONAM – 612 001

11TH STANDARD NEW SYLLABUS

UNIT – I

FUNDAMENTALS OF COMPUTER AND WORKING WITH TYPICAL OPERATING SYSTEMS (WINDOWS & LINUX)

CHAPTER – 1

INTRODUCTION TO COMPUTERS

2 MARKS AND 3 MARKS

1. **What is Computer?**

   - It is an electronic device that processes the input according to the set of instructions provided to it and gives the desired output at a very fast rate.
   - Computers have revolutionized our lives with their accuracy and speed of performing a job, it is truly remarkable.

2. **Who is Charles Babbage?**

   - Charles Babbage is the **father of computer.**
   - He Invented **Analytical Engine in 1837.**
   - It contains an Arithmetic Logic Unit (ALU), basic flow control, and integrated memory; which led to the development of first general-purpose computer concept.

3. **List the Merits and Demerits of Transistors?**

   - Smaller compared to First Generation
   - Generated Less Heat
   - Consumed less power compared to first generation
   - Punched cards were used
   - First operating system was developed - Batch Processing and Multiprogramming Operating System
   - Machine language as well as Assembly language was used.

4. **What is ENIAC?**

   - The ENIAC (Electronic Numerical Integrator And Calculator) was invented by J. Presper Eckert and John Mauchly at the University of Pennsylvania and began construction in 1943 and was not completed until 1946.

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- It occupied about 1,800 square feet and used about 18,000 vacuum tubes, weighing almost 50 tons.

5. Define Data

- Data is defined as a un- processed collection of raw facts, suitable for communication, interpretation or processing.
- **Eg:** 134, 16 'Kavitha', 'C' are data. This will not give any meaningful message.

6. Define Information

- Information is a collection of facts from which conclusions may be drawn.
- That data is the raw facts that are processed to give meaningful, ordered or structured information.
- **Eg:** Kavitha is 16 years old.

7. Define Hardware and Software

- **Hardware** is the **physical** component of a computer like motherboard, memory devices, monitor, keyboard etc.,
- **Software** is the set of **programs** or **instructions**.

8. Define IPO Cycle

- **I**nput – **P**rocess – **O**utput Cycle
- It needs certain input, processes that input and produces the desired output.
- The input unit takes the input, the central processing unit does the processing of data and the output unit produces the output.
- The memory unit holds the data and instructions during the processing.

9. What is Input Unit?

- Input unit is used to feed any form of data to the computer, which can be stored in the memory unit for further processing.
- **Eg::** Keyboard, mouse, etc.

10. What is CPU?

- CPU is the major component which interprets and executes software instructions.

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- It also controls the operation of all other components such as memory, input and output units.
- It accepts binary data as input process the data according to the instructions and provides the result as output.
- The CPU has **three** components which are **Control unit, Arithmetic and logic unit (ALU) and Memory unit.**

11. Define ALU?

- The ALU is a part of the CPU where various computing functions are performed on data.
- The ALU performs **arithmetic operations** such as addition, subtraction, multiplication, division and logical operations.
- The result of an operation is stored in internal memory of CPU.
- The logical operations of ALU promote the decision-making ability of a computer.

12. What is Control Unit?

- The control unit **controls** the flow of data between the CPU, memory and I/O devices.
- It also controls the entire operation of a computer.

13. Define Output Unit

- An Output Unit is any hardware component that **conveys information to users in an understandable form.**
- **Eg:** Monitor, Printer etc.

14. What are the types of Memory?

- There are two types of memory primary memory and secondary memory.
- The primary memory is used to temporarily store the programs and data when the instructions are ready to execute. The Primary Memory is volatile, that is, the content is lost when the power supply is switched off. **Eg:** Random Access Memory (RAM)
- The secondary memory is used to store the data permanently.
- The Secondary memory is non volatile, that is, the content is available even after the power supply is switched off. **Eg:** Hard disk, CD-ROM and DVD ROM

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15. What is Memory Unit?

- ✆ The Memory Unit is of two types which are primary memory and secondary memory.

   Primary Memory:

- ✆ The primary memory is used to temporarily store the programs and data when the instructions are ready to execute.
- ✆ The Primary Memory is volatile, that is, the content is lost when the power supply is switched off.
- ✆ **Eg:** Random Access Memory (RAM)

   Secondary Memory:

- ✆ The secondary memory is used to store the data permanently.
- ✆ The Secondary memory is non volatile, that is, the content is available even after the power supply is switched off. Hard disk, CD-ROM and DVD ROM are examples of secondary memory.

16. Define Keyboard

- ✆ Keyboard (wired / wireless, virtual) is the most **common input device** used today.
- ✆ The individual keys for letters, numbers and special characters are collectively known as character keys. Keyboard layout is derived from the Typewriter.
- ✆ The data and instructions are given as input to the computer by typing on the keyboard.
- ✆ There are different set of keys available in the keyboard such as function keys, character keys, modifier keys, system and GUI keys, enter and editing keys, function keys, navigation keys, numeric keypad and lock keys.

17. Define Mouse

- ✆ Mouse (wired/wireless) is a **pointing device** used to control the **movement of the cursor** on the display screen.
- ✆ It can be used to select icons, menus, command buttons or activate something on a computer. Some mouse actions are move, click, double click, right click, drag and drop.
- ✆ **Eg:** Mechanical Mouse, Optical, Laser Mouse, etc.,

18. What are the different types of mouse?

- ✆ Different types of mouse available are: Mechanical Mouse, Optical, Laser Mouse, Air Mouse, 3D Mouse, Tactile Mouse, Ergonomic Mouse and Gaming Mouse.

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19. Differentiate Optical and Laser Mouse?

OPTICAL MOUSE	LASER MOUSE
Measures the motion and acceleration of pointer	Measures the motion and acceleration of pointer
	Laser Mouse uses Laser Light
It is **less sensitive** towards surface	It is **highly sensitive** towards surface
It has **three** buttons	It has **three** buttons

20. What are the Mouse actions?

- �🖰 Some mouse actions are move, click, double click, right click, drag and drop.

21. Define Scanner

- �🖰 Scanners are used to enter the information directly into the computer's memory.
- �🖰 This device works like a **Xerox machine.**
- �🖰 The scanner converts any type of printed or written information including photographs into a digital format, which can be manipulated by the computer.

22. What is meant by Track Ball?

- �🖰 Track ball is similar to the **upside- down** design of the mouse.
- �🖰 The user moves the ball directly, while the device itself remains stationary.
- ⚲ The user spins the ball in various directions to navigate the screen movements.

23. What is Finger Print Scanner?

- ⚲ Finger print Scanner is a **fingerprint recognition device** used for computer security, equipped with the fingerprint recognition feature that uses biometric technology.
- ⚲ Fingerprint Reader / Scanner are a very safe and convenient device for security instead of using passwords, which is vulnerable to fraud and is hard to remember.

24. What is Retinal Scanner?

- ⚲ It performs a retinal scan which is a **biometric technique** that uses unique patterns on a person's **retinal blood vessels.**

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25. What is Light Pen?

- A light pen is a **pointing device** shaped like a **pen** and is connected to a monitor.
- The tip of the light pen contains a **light-sensitive element** which detects the light from the screen enabling the computer to identify the location of the pen on the screen.
- Light pens have the advantage of 'drawing' directly onto the screen, but this becomes hard to use, and is also not accurate.

26. What is meant by OCR?

- **OCR** means **Optical Character Recognition.** It is a device which detects characters printed or written on a paper with OCR, a user can scan a page from a book.
- The Computer will recognize the characters in the page as letters and punctuation marks and stores.
- The Scanned document can be edited using a word processor.

27. What is Bar Code Reader?

- A Bar code is a pattern printed in lines of **different thickness.**
- The Bar code reader scans the information on the bar codes transmits to the computer for further processing.
- The system gives fast and error free entry of information into the computer.

28. What is QR Code Reader?

- The QR code is the two dimension bar code which can be read by a camera and processed to interpret the image

29. What is meant by Microphone?

- Microphone serves as a **Voice Input device.**
- It captures the **voice data** and sends it to the Computer.
- Using the microphone along with speech recognition software can offer a completely new approach to input information into the Computer.

30. What is Digital Camera?

- It **captures** images / videos directly in the digital form.
- It uses a **CCD** (Charge Coupled Device) electronic chip.

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🖰 When light falls on the chip through the lens, it converts light rays into digital format.

31. What is Touch Screen?

🖰 It is a display device that allows the user to **interact with a computer by using the finger.**

🖰 It can be quite useful as an alternative to a mouse or keyboard for navigating a Graphical User Interface (**GUI**).

🖰 It is used in computers, laptops, monitors, smart phones, tablets, etc.,

32. Define Keyer

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

🖰 Modern Keyers have a large number of switches but not as many as a full size keyboard.

🖰 Typically, this number is between 4 and 50.

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

33. What is Monitor?

🖰 Monitor is the **most commonly used output device** to display the information. It looks like a TV.

🖰 Pictures on a monitor are formed with picture elements called **PIXELS**.

🖰 Monitors may either be **Monochrome** which display text or images in **Black** and **White** or can be **color**, which display results in **multiple colors**.

🖰 **Types: CRT** (Cathode Ray Tube), **LCD** (Liquid Crystal Display) and **LED** (Light Emitting Diodes).

34. Define Plotter

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

🖰 It uses single color or multi color pens to draw pictures.

35. Define Printer. What are the types of Printer?

🖰 Printers are used to **print** the **information** on **papers**.

🖰 Printers are divided into two main categories:

☯ Impact Printers

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❧ Non Impact printers

36. What is Impact Printer?

- ᵕ These printers print with striking of **hammers or pins on ribbon.**
- ᵕ These printers can print on **multi-part (using carbon papers)** by using mechanical pressure.
- ᵕ **Eg:** Dot Matrix printers and Line matrix printers are impact printers.

37. What is Non – Impact Printer?

- ᵕ These printers **do not use striking mechanism for printing.**
- ᵕ They use electrostatic or laser technology.
- ᵕ Quality and speed of these printers are better than Impact printers.
- ᵕ **Eg:** Laser printers and Inkjet printers are non-impact printers.

38. What is Dot – Matrix Printer?

- ᵕ A Dot matrix printer that prints using a **fixed number of pins or wires.**
- ᵕ Each dot is produced by a tiny metal rod, also called a "wire" or "pin", which works by the power of a tiny electromagnet or solenoid, either directly or through a set of small levers.
- ᵕ It generally prints one line of text at a time.
- ᵕ The printing speed of these printers varies from **30 to 1550 CPS (Character per Second).**

39. What is meant by Line Printer?

- ᵕ Line matrix printers use a fixed print head for printing.
- ᵕ It prints a page-wide line of dots. But it builds up a line of text by printing lines of dots.
- ᵕ It is capable of printing much more than 1000 Lines per Minute, resulting in thousands of pages per hour.
- ᵕ These printers also use mechanical pressure to print on multi-part (using carbon papers).

40. What is Laser Printer?

- ᵕ Laser printers mostly work with similar technology used by photocopiers.

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- It makes a laser beam scan back and forth across a drum inside the printer, building up a pattern.
- It can produce very good quality of graphic images.
- One of the chief characteristics of laser printer is their resolution – how many Dots per inch(DPI).
- The available resolution range around 1200 dpi. Approximately it can print 100 pages per minute(PPM)

41. What is Inkjet Printer?

- Inkjet Printers use colour cartridges which combined Magenta, Yellow and Cyan inks to create color tones.
- A black cartridge is also used for monochrome output.
- Inkjet printers work by spraying ionized ink at a sheet of paper.
- An Inkjet printer can spread millions of dots of ink at the paper every single second.
- The speed of Inkjet printers generally range from **1-20 PPM (Page per Minute).**

42. Define Speaker

- Speakers produce **voice output (audio).**
- Using speech synthesize software, the computer can provide voice output.
- This has become very common in places like airlines, schools, banks, railway stations, etc..

43. What is Multimedia Projector?

- Multimedia projectors are used to produce computer **output on a big screen.**
- These are used to display presentations in meeting halls or in classrooms.

44. What are the types of Booting?

Cold Booting:

- When the system starts from **initial state** i.e. it is switched on, we call it **Cold Booting or Hard Booting.**
- When the user presses the Power button, the instructions are read from the ROM to initiate the booting process.

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Warm Booting:

- When the system restarts or when reset button is pressed, we call it **Warm Booting or Soft Booting.**

- The system **does not start from initial state** and so all diagnostic tests need not be carried out in this case.

- There are chances of data loss and system damage as the data might not have been stored properly.

45. What is NLP?

- A high-level language is a computer programming language that isn't limited by the computer, designed for a specific job, and is easier to understand.