



**SSC & RAILWAY**

# COMPUTER AWARENESS

## HIGHLIGHTS

- **Covers entire syllabus**
- **Previous Questions**



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## Preface

Dear Aspirants,

It gives me immense pride to introduce our latest publication, **Computer Knowledge**, crafted exclusively for **SSC and Railway** exam aspirants. In today's technology-driven world, a strong understanding of computer fundamentals has become indispensable. Competitive exams reflect this trend by testing candidates' knowledge in this domain, making it a vital section for your success.

This book has been carefully designed to cater to your preparation needs. It encompasses a detailed collection of previous years' questions to give you a clear understanding of exam patterns and an extensive range of practice questions to build and enhance your proficiency. Each topic is explained with clarity, and solutions are provided to ensure thorough understanding and application.

At Jayakrishnan EduTips, we are dedicated to your success and committed to providing resources that align with the latest syllabus and exam requirements. Whether you are starting your preparation or looking for an in-depth revision, this book will serve as a comprehensive guide to mastering computer knowledge.

I am confident that this book will prove to be a valuable asset in your preparation and help you achieve your goals. Wishing you the very best for your exams and all future endeavours.

Warm regards,

**Jayakrishnan Ramachandran**  
Director, Jayakrishnan EduTips



# COMPUTER AWARENESS



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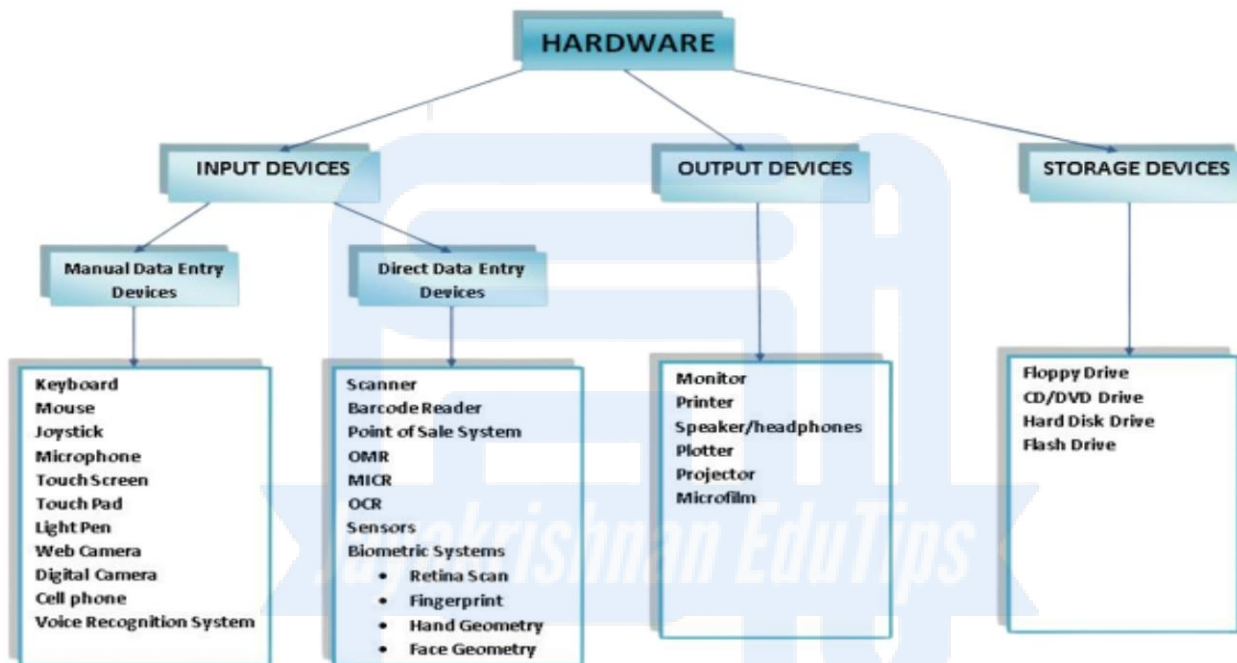
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# Hardware

## WHAT IS COMPUTER?

Computer is an electronic device that is designed to work with Information.

Computer cannot do anything without a Program. It can store, retrieve, and process data.



**Hardware** is the collection of physical part of a computer system. Ex. Monitor, Hard discs, keyboards, Mouse, Cabinet Motherboard etc.



## KEYBOARD:

Keyboard is a typewriter-style device which uses an arrangement of buttons or keys to act as a mechanical lever or electronic switch.

**QWERTY :** QWERTY is a keyboard layout for Latin script. The name comes from the order of the first six keys on the top left letter row of the keyboard.



## MOUSE

A computer mouse is a pointing device (hand control) that detects two-dimensional motion relative to a surface. This motion is typically translated into the motion of a pointer on a display, which allows a smooth control of the graphical user interface.

## SCANNER

A scanner or optical scanner is a hardware input device that optically "reads" an image and converts it into a digital signal.

## GAME CONTROLLER

A game controller is an input device for playing games.

## Light Pen

A Light Pen is a pointing device shaped like a pen and is connected to a VDU. The tip of the light pen contains a light-sensitive element.

## PDA (Personal Digital Assistant)

A personal digital assistant (PDA), also known as a handheld PC, or personal data assistant, is a mobile device that functions as a personal information manager.

## MICR (Magnetic Ink Character Recognition)

It is a technology which allows machines to read and process cheque enabling thousands of cheque transactions in a short time. MICR code is usually a nine-digit code comprising of some important information about the transaction and the bank.

## BCR (Bar Code Reader)

A Bar Code Reader, also called a price scanner or

point-of-sale (POS) scanner.

## OCR (Optical Character Recognition)

Optical Character Recognition (also Optical Character Reader, OCR) is the mechanical or electronic conversion of images of typed, handwritten, or printed text into machine-encoded text.

## OMR (Optical Mark Recognition)

Optical mark recognition (also called Optical Mark Reading and OMR) is the process of capturing human-marked data from document forms such as surveys and tests.

## Touch Pad

A computer input device in the form of a small panel containing different touch-sensitive areas.

## Biometric

Biometrics are automated methods of recognizing a person based on a physiological or behavioral characteristic.

**Trackball:** A trackball is a pointing device.

**Web Camera:** A webcam is a video camera that feeds or streams its image in real time to or through a computer to a computer network.

## QR (Quick Response)

A machine-readable code consisting of an array of black and white squares,

## Processing Unit, Output, Storage Microprocessor

A microprocessor is a computer processor which

incorporates the functions of a computer's central processing unit (CPU) on a single integrated circuit (IC), or at most a few integrated circuits.

## CPU - (Central Processing Unit)

### CPU have three Units

- I. Memory Unit
- II. Control Unit
- III. Arithmetic Logic Unit

### First Microprocessor = 4004 (intel)

A processor register (CPU register) is one of a small set of data holding places that are part of the computer processor.

## Motherboard

A motherboard is the main printed circuit board (PCB) found in general purpose microcomputers and other expandable systems.

### Components of Motherboard

- Microprocessor
- RAM/ROM
- BIOS (Basic Input Output System)
- Expansion slot
- Interconnecting Circuit

### Output Devices

- Monitor
- Printer
- Plotter
- Speaker
- Projector etc.

### Types of Monitors

- CRT
- LCD/TFT
- LED

**CRT:** The Cathode Ray Tube (CRT) is a vacuum tube that contains one or more electron guns and a phosphorescent screen and is used to display images.

**LCD:** A flat panel screen that uses the Liquid Crystal Display (LCD) technology and connects to a computer.

**TFT:** A Thin-Film-Transistor Liquid-Crystal Display (TFT LCD) is a variant of a liquid-crystal display (LCD) that uses thin-film transistor (TFT) technology to improve image qualities such as addressability and contrast.

**LED:** An LED display is a flat panel display, which uses an array of light-emitting diodes as pixels for a video display.

## Printer

A printer is a device that accepts text and graphic output from a computer and transfers the information to paper, usually to standard size sheets of paper.

### Types of Printers

Impact Printer	Non-Impact
Impact printer refers to a class of printers that work by banging a head or needle against an ink ribbon to make a mark on the paper.	Non-impact printers are quieter than impact printers, that prints without striking the paper
<ul style="list-style-type: none"> <li>➤ Dot-matrix Printer</li> <li>➤ Daisy-Wheel Printers,</li> <li>➤ Line Printers.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Laser Printer,</li> <li>➤ Ink-jet Printer,</li> <li>➤ LED Page Printer</li> </ul>

## Plotter

The plotter is a computer printer for printing vector graphics. In the past, plotters were used in applications such as computer-aided design, though they have generally been replaced with wide-format conventional printers.

## Speaker

Computer speakers, or multimedia speakers, are speakers sold for use with computers, although usually capable of other audio uses,

## Projector

A projector or image projector is an optical device that projects an image (or moving images) onto a surface, commonly a projection screen.

### Storage Devices

- Hard Disk Drive
- Floppy Disk
- Magnetic Tape
- Compact Disc
- Digital Versatile Disc
- Blu Ray Disc
- Pen Drive
- Memory Card

# Software

It is a set of programs and procedures. Software tells the hardware what to do and how to accomplish a task. Ex. Operating System (Windows, Unix, Linus, Mac OS, Web browsers, MS Office etc.

software serves as the interface between hardware and the end users. Examples: Operating System, Compilers, Interpreter, Assembler etc.

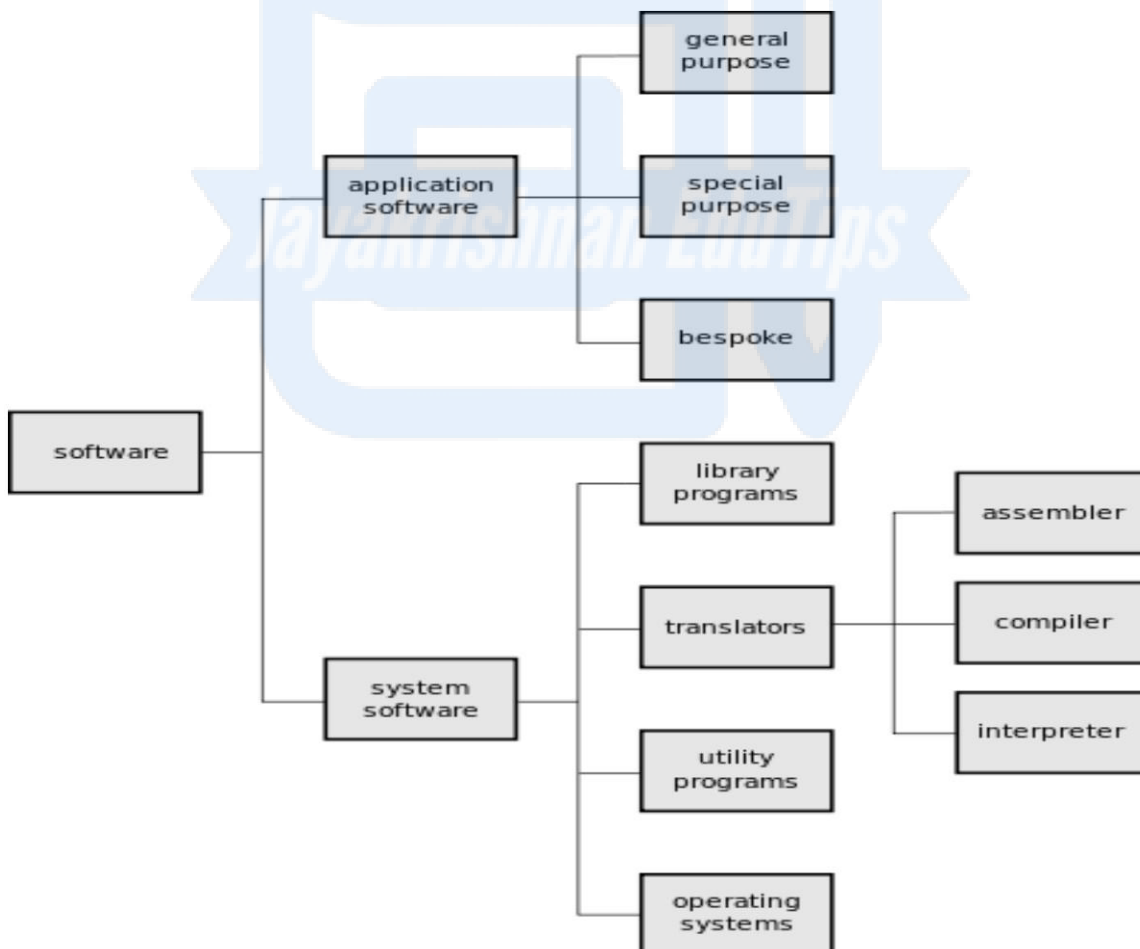
## Types of Software

### 1. System Software

The system software is collection of programs designed to operate, control, and extend the processing capabilities of the computer itself. System software are generally prepared by computer manufactures. System

### 2. Application Software

Application software is the set of programs necessary to carry out operations for a specified application. Application software's are designed and developed to solve a specific problem in business or scientific area. Examples: Word processors, Data Base System, Accounting Packages, DTP Packages. Graphics Packages, etc.



## OPERATING SYSTEM

An operating system (OS) is system software that manages computer hardware and software resources and provides common services for computer programs.

Ex. WINDOWS, MACINTOSH, ANDROID, UNIX, LINUX

## WINDOW

Windows is a GUI based operating system. In Windows Operating system multiple applications can be simultaneously run-in different windows.

- In Windows, the screen upon which icons, windows, too are displayed is known as desktop.
- An icon is a graphic symbol that represents a window element like, file, folder, or shortcut.
- Boot loading up of operating system files into the computer's memory is called booting up.

### There are two 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.
  - Warm Booting:** When the system restarts or when Reset button is pressed, we call it Warm Booting or Soft Booting.
- The taskbar is a bar, which is usually located at the bottom of the screen.
  - My computer is helpful for viewing the contents of a single folder or drive.
  - Windows Explorer is another way of seeing what is on your computer. Windows Explorer shows the computer's contents as a hierarchy.
  - **File:** A program or document stored on a disk.
  - **Toolbar:** A set of buttons you click to perform common tasks.
  - A folder is a location in which you can store files and other folders.
  - To create a new folder, File—New—Folder commands are clicked in My Computer windows.
  - To find files or folders, Start---Find---Files or Folder commands are clicked.
  - To create a shortcut to a file, firstly select the file or folder, whose shortcut is to be created. Then drag the file icon through right mouse button to desired location where shortcut to be placed, and then select create shortcut(s).
  - To shut down the computer, Go to Start and Shut Down commands are clicked.

## ANDROID

Android Version	Release Year
Android 1.0 (Alpha)	Sep 2008
Android 1.1 (Beta)	Feb 2009
Cupcake	April 2009
Donut	Sep 2009
Eclair	Oct 2009
Froyo	May 2010
Gingerbread	Dec 2010
Honeycomb	Feb 2011
Icecream Sandwich	Oct 2011
Jelly Bean	Nov 2012
KitKat	Oct 2013
Lollipop	Nov 2014
Marshmallow	Oct 2015
Nougat	Oct 2016
Oreo	Aug 2017
Pie	Aug 2018
Android 10	Sep 19
Android 11	Sep 2020
Android 13	Aug 2022

**LINUX:** It is also a multi-tasking operating system, which was originally designed to be used on personal computers.

- Instruction** It is a command given to a computer in the computer language by the user.
- Program** It is a set of instructions given to a computer to perform some tasks.
- Data** Unprocessed raw facts and figures, like numbers, text on piece of paper, are known as data.
- Information** When data is processed, organized, structured, or presented in each context to meaningful, then it is called information.

**Freeware:** Software which is completely costless. The producers of this kind of software are either public institutions such as universities or developers who do it for personal interest or advertisement or private company who do it for dumping reasons.

**Shareware:** Software which is initially costless but after a certain period the user is asked to pay a fee or delete it. Or software which has two versions a free one, but incomplete or with advertisement banners and a complete advertisement free one for which the user must pay. The most common example is WinZip compression program.

**Commercial:** Software for which the user has to pay a license to use it. Common examples are Microsoft Windows operating system and Microsoft office.

**Custom software:** Software uniquely built, under payment for a specific customer to fit his need. Only the customer may use it.

**Open Source:** Software may be modified by anyone, sometimes under certain restrictions. Open-source software is also freeware.

**Proprietary:** Software is distributed with the explicit with the explicit legal warning not to modify it and technically locked to prevent other developers to see or modify its source.

**Four basic functions of Computer are given below:**

IPOS (Input → Processing → Output → Storage)

1. **Input** Information or data that is entered into a computer is called input. It sends data and instructions to the Central Processing Unit (CPU). Data inputs through Input Devices, Such as (Keyboard, Mouse etc.)
2. **Processing** It is the sequence of actions taken on data to convert it into information which is meaningful to the user. It can be calculations, comparisons or decisions taken by the computer. Processing Completed by Microprocessor. (CPU)
3. **Output** It makes processed data available to the user. It is mainly used to display the desired result to the user as per input instructions. Display Data on Output devices like as Monitor, Printer, Projector etc.
4. **Storage** It stores data and programs permanently. It is used to store information during the time of program execution and possible to get any type of information from it. Storage data in Hard Disk, SD Card, SSD, Pendrive etc.

## Main Key Features of Computer

### Speed

The computer can process data very fast at the rate of millions of instructions per second.

### Accuracy

Computers provide a high degree of accuracy. They respond to the user as per the input instructions.

### Storage

Capacity Computers are capable to store huge amount of data which depends on the capacity of hard disk, SSD, etc.

### Versatility

Computers can do different types of work simultaneously. They can perform multiple tasks at a same time.

### Reliability

Reliability is an attribute of any computer-related component (software, or hardware, or a network) that consistently performs according to its specifications. Computers always produce exact results. The possibility of errors occur only if the input is wrong, i.e. the computers never make mistakes of their own accord.

## Introduction to graphic user interface based operating system

### Graphical User Interface (GUI)

GUI stands for Graphical User Interface. it provides a graphical interface for the user to interact with the computer. It uses icons, menus, etc. to interact with the user. Moreover, the user can easily interact by just clicking these items. Therefore, it is very user friendly and there is no need to remember any commands. Examples of GUI based operating system are Microsoft Windows, macOS, etc.

### Types of Operating System (GUI based)

The different types of operating system on the basis of GUI are as follows:

#### 1. Microsoft Windows

Microsoft Windows is one of the most common graphical OS. It is developed and marketed by Microsoft. Its common name is windows or win. Windows 11 is the latest major release of Microsoft's Windows NT operating system, released in October 2021. Moreover, it has several earlier versions like Windows XP, Windows 8, Windows 7, etc. Besides, the most common editions for home computers are Windows Home (Win Home) and Windows Professional (Win Pro or Windows Pro).