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COURSE ON COMPUTER CONCEPTS
INTRODUCTION TO OPERATING SYSTEM

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2.0 Introduction

> *An Operating System (OS) is system software that acts as a bridge between the user and the computer hardware. It manages all hardware and software resources and provides an environment in which other programs can run.*

When you switch on a computer, the first thing that loads is the operating system. Without it, you cannot open files, run applications or even see the desktop. Think of the OS as a **manager of a hotel**: guests (users and programs) ask for rooms (memory, CPU time, devices) and the manager decides who gets what and when.

Where does the OS sit in a computer system?

Layer	Description	Example
User	Person who uses the computer	Student, office worker
Application Software	Programs that do specific user tasks	MS Word, Chrome, Tally
Operating System	Manages hardware and runs applications	Windows, Linux, macOS, Android
Hardware	Physical parts of the computer	CPU, RAM, disk, keyboard, monitor

2.1 Objectives

After studying this chapter, you will be able to:

- Define an operating system and explain its main functions
- Differentiate between the types of operating systems and understand the booting process
- Name popular operating systems for desktop/laptop and for mobile phones/tablets
- Identify the parts of the Windows desktop — taskbar, icons, shortcuts and windows
- Run, switch and close applications
- Change simple settings: mouse, date and time, display, programs and printers
- Create, copy, move, rename, delete and search files and folders
- Recognize common file extensions and the type of file they represent

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2.2 Operating System

2.2.1 Basics of Operating System

A. Functions of an Operating System

Function	Description
Process Management	Decides which program gets the CPU and for how long; allows multitasking
Memory Management	Allocates RAM to programs and takes it back when they close
File Management	Creates, stores, organizes, searches and protects files and folders
Device Management	Controls input/output devices using device drivers
Security	Passwords, user accounts, permissions, firewall and antivirus support
User Interface	Provides CLI or GUI so that the user can interact with the computer
Networking	Connects the computer to Wi-Fi, LAN and the Internet
Error Handling	Detects errors and reports them to the user

B. Types of Operating Systems

Type	Meaning	Example
Batch OS	Jobs are collected and run one after another without user interaction	Early IBM mainframes
Single-user, Single-task	One user runs one program at a time	MS-DOS
Multi-tasking	Runs several programs at the same time	Windows, macOS, Android
Multi-user	Many users use the same computer at the same time	Linux/UNIX servers
Real-time (RTOS)	Gives output within a fixed time; used in critical systems	Air traffic control, medical devices
Distributed / Network	Many connected computers work together as one system	Cloud data centres
Embedded	Built into a device to run it	Washing machine, smart TV, ATM

C. Types of User Interface

Interface	Description	Example
CLI — Command Line Interface	User types text commands; fast but needs commands to be remembered	Command Prompt, PowerShell, Linux terminal
GUI — Graphical User Interface	Uses windows, icons, menus and pointer (WIMP); easy to use	Windows, macOS, Ubuntu desktop
Touch / Voice Interface	Operated by touch gestures or voice commands	Android, iOS, Siri, Google Assistant

D. Booting — How a Computer Starts

Step	Action
1. Power ON	Power reaches the motherboard and the CPU starts

Step	Action
2. POST	Power-On Self Test — BIOS/UEFI checks RAM, keyboard, disk and other hardware
3. BIOS / UEFI	Firmware in ROM finds the boot device (SSD/HDD/USB)
4. Boot Loader	Small program that loads the OS kernel into RAM
5. OS Loads	Kernel, drivers and services start; login screen / desktop appears

- **Cold boot** — starting a computer from the OFF state using the power button.
- **Warm boot** — restarting a computer that is already ON (Restart option or Ctrl+Alt+Del).
- **Kernel** — the core of the OS that directly controls hardware, memory and processes. **Shell** — the part that takes commands from the user.

> **Exam Tip:** Booting = loading the OS into RAM. POST = Power-On Self Test. Kernel = core of OS. Shell = user's interface to kernel.

2.2.2 Operating Systems for Desktop and Laptop

Operating System	Developer	Features	Used On
Windows (10, 11)	Microsoft	Most popular desktop OS; easy GUI; huge software support; proprietary	PCs, laptops from most brands
macOS	Apple	Smooth, secure; popular for design and video editing; proprietary	Apple Mac, MacBook
Linux (Ubuntu, Fedora, Mint)	Community (Linus Torvalds started the kernel)	Open source, free, secure and stable; widely used for servers	PCs, laptops, servers
BOSS Linux	C-DAC, India	Indian Linux distribution made for government and education use	Government offices, schools
Chrome OS	Google	Light, cloud-based OS that mainly runs web apps	Chromebooks

Windows editions: Home (personal use), Pro (business features such as BitLocker and remote desktop), Enterprise (large organizations) and Education (schools and colleges).

Basic requirements for Windows 11: 64-bit processor (1 GHz, 2 or more cores), 4 GB RAM, 64 GB storage, UEFI with Secure Boot and TPM 2.0.

> **Note:** Windows 10 reached end of support on 14 October 2025, so Microsoft no longer provides free security updates for it. Windows 11 is the current Windows version.

2.2.3 Operating Systems for Mobile Phones and Tablets

> *A mobile operating system is designed for touch-screen devices such as smartphones and tablets. It manages the touch screen, sensors, camera, battery, mobile network and apps.*

Mobile OS	Developer	Details	Devices
Android	Google	Based on Linux; open-source core (AOSP); apps from Google Play Store; used by many brands	Samsung, Xiaomi, Realme, Vivo, OnePlus, Motorola etc.
iOS	Apple	Closed, proprietary; smooth and secure; apps from Apple App Store	iPhone

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Mobile OS	Developer	Details	Devices
iPadOS	Apple	Version of iOS designed for larger tablet screen with multitasking	iPad
HarmonyOS	Huawei	Developed by Huawei for its phones, tablets and smart devices	Huawei devices
watchOS / Wear OS	Apple / Google	Operating systems for smartwatches	Apple Watch, Android smartwatches

Android vs iOS

Basis	Android	iOS
Developer	Google (open-source core)	Apple (closed source)
Devices	Many companies, many price ranges	Only Apple iPhones
App Store	Google Play Store	Apple App Store
Customization	High — launchers, widgets, default apps	Limited
Updates	Depend on the phone maker	Directly from Apple for all supported models

- Mobile OS features: touch gestures, notification panel, app permissions, biometric lock (fingerprint/face), Wi-Fi/Bluetooth/mobile data control and automatic updates.
- Keep the mobile OS updated and install apps only from the official store.

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2.3 User Interface for Desktop and Laptop

> *The user interface is what the user sees and uses to control the computer. In Windows, the main screen is called the **Desktop**. It contains icons, a background (wallpaper) and the taskbar.*

Element	Description
Desktop	Main working screen shown after login; contains wallpaper, icons and taskbar
Icon	Small picture that represents a file, folder, program or drive
Start Menu	Opens with the Windows key; shows pinned apps, all apps, search, power options (Shut down, Restart, Sleep)
Taskbar	Bar at the bottom of the screen with Start button, search, apps and system tray
Recycle Bin	Temporary storage for deleted files; they can be restored from here
Window	Rectangular area in which a program or folder opens
Pointer / Cursor	Arrow on the screen that moves with the mouse

Parts of a Window

Part	Function
Title Bar	Shows the name of the program/file; drag it to move the window
Minimize, Maximize/Restore, Close	Three buttons at top-right: hide to taskbar, enlarge / return to normal size, close the window
Menu Bar / Ribbon / Command bar	Contains commands and tools of the program
Scroll Bars	Move the content up/down or left/right
Status Bar	Shows information at the bottom of the window
Address Bar	Shows the location (path) in File Explorer

2.3.1 Task Bar

> *The taskbar is the long bar usually at the bottom of the screen. It gives quick access to the Start menu, pinned applications and all running programs.*

Part	Function
Start Button	Opens the Start menu (Windows logo)
Search	Search apps, files, settings and the web
Task View	Shows all open windows and virtual desktops (Win + Tab)
Pinned Apps	Shortcuts of favourite apps kept on the taskbar for one-click opening
Running Apps	Open programs are shown with a small line below their icon
Notification Area (System Tray)	Shows hidden icons, Wi-Fi, volume, battery, notifications and antivirus icons
Date & Time	Shows the current time and date; click it for the calendar
Show Desktop	Narrow area at the extreme right end; click to see the desktop

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Useful taskbar operations:

- **Pin an app:** right-click an app → Pin to taskbar. **Unpin:** right-click → Unpin from taskbar.
- **Taskbar settings:** right-click on an empty area of the taskbar → Taskbar settings (hide search, change icon alignment, auto-hide).
- **Right-click the clock** → Adjust date and time.
- **Right-click a running app** to see its jump list (recent files) or to close the window.

2.3.2 Icons & Shortcuts

> *An icon is a small graphic that represents a file, folder, program or device. A shortcut is a link (pointer) to an original file, folder or program kept at a convenient place such as the Desktop.*

Basis	Icon (original item)	Shortcut
Meaning	Represents the actual file/folder/program	Link that opens the original item
Identification	No arrow	Small arrow on the corner of the icon
If deleted	Actual file is deleted	Only the link is deleted; original stays safe
File type	Own extension (.docx, .exe)	.lnk file

Common desktop icons: This PC, Recycle Bin, Network, Control Panel and the User folder. To show them: *Settings → Personalization → Themes → Desktop icon settings*.

Creating a Desktop Shortcut

- **Method 1:** Right-click on the file/program → Show more options → Send to → Desktop (create shortcut).
- **Method 2:** Right-click on an empty area of Desktop → New → Shortcut → Browse the item → Next → type a name → Finish.
- **Method 3:** Drag the app from the Start menu to the Desktop.

Working with Icons

- **Arrange:** right-click Desktop → Sort by → Name / Size / Item type / Date modified.
- **View:** right-click Desktop → View → Large / Medium / Small icons; Auto arrange icons; Show desktop icons.
- **Rename:** select the icon and press F2. **Delete:** select and press Delete.

Important Keyboard Shortcuts

Shortcut	Action	Shortcut	Action
Ctrl + C	Copy	Win + D	Show / hide desktop
Ctrl + X	Cut	Win + E	Open File Explorer
Ctrl + V	Paste	Win + R	Open Run box
Ctrl + Z	Undo	Win + I	Open Settings
Ctrl + Y	Redo	Win + L	Lock the computer
Ctrl + A	Select all	Win + Tab	Task View
Ctrl + S	Save	Alt + Tab	Switch between apps
Ctrl + P	Print	Alt + F4	Close the active window
F2	Rename	Ctrl + Shift + Esc	Open Task Manager
F5	Refresh	Win + Shift + S	Screenshot (Snipping tool)
Delete	Delete (to Recycle Bin)	Shift + Delete	Delete permanently

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2.3.3 Running an Application

Method	How to do it
From Start menu	Click Start → select the app from Pinned or All apps
By Search	Click Search (or press Windows key) → type the app name → press Enter
Desktop shortcut	Double-click the application shortcut icon on the Desktop
Taskbar	Click the pinned application icon on the taskbar
Run box	Press Win + R → type name (notepad, calc, mspaint, cmd, winword) → OK
Open a file	Double-click a document; Windows opens it in its associated application
File Explorer	Go to the .exe file of the program and double-click it

Managing running applications:

- **Switch:** click the app on the taskbar or press Alt + Tab.
- **Minimize / Maximize / Close:** use the three buttons at the top-right of the window; Alt + F4 closes the window.
- **Snap windows:** Win + Left/Right arrow places a window on half the screen.
- **Not responding application:** press Ctrl + Shift + Esc → Task Manager → select the app → End task.

> **Note:** Task Manager shows all running programs and how much CPU, memory, disk and network they use. Use it only to close an application that has hung (stopped responding).

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2.4 Operating System Simple Settings

> *Most settings of Windows are available in the **Settings** app (press Win + I, or Start → Settings). The older **Control Panel** (Start → search "Control Panel") also has many settings. The steps below are for Windows 11; Windows 10 steps are similar.*

2.4.1 Using Mouse and Changing its Properties

Mouse Action	Result
Single left click	Selects an item or presses a button
Double click	Opens a file, folder or program
Right click	Opens the context (shortcut) menu
Click and drag	Moves an item or selects many items
Scroll wheel	Scrolls pages up/down; Ctrl + wheel zooms
Hover	Pointing at an item without clicking shows its tooltip

Steps to change mouse properties

- Press **Win + I** → **Bluetooth & devices** → **Mouse** (in Windows 10: Settings → Devices → Mouse).
- Set **Primary mouse button** to Left or Right (for left-handed users).
- Drag the **Mouse pointer speed** slider to make the pointer slower or faster.
- Under **Scrolling**, choose how many lines the wheel scrolls at a time.
- Click **Additional mouse settings** to open **Mouse Properties** (also: Control Panel → Mouse).
- In Mouse Properties: **Buttons** tab — switch buttons, double-click speed, ClickLock; **Pointers** tab — change pointer scheme/shape; **Pointer Options** — speed, snap to default button, show pointer trails; **Wheel** tab — scroll lines.
- Click **Apply** and then **OK**.

2.4.2 Changing System Date and Time

Correct date and time are important for file records, emails, certificates and secure websites.

Steps

- Right-click on the clock in the taskbar → **Adjust date and time** (or Settings → **Time & language** → **Date & time**).
- Turn **Set time automatically** ON to take time from the Internet.
- To change manually, turn the automatic option OFF → next to *Set the date and time manually* click **Change** → select date and time → click **Change**.
- Choose the correct **Time zone** — for India select **(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi**.
- To change the date format (e.g., dd-mm-yyyy): Settings → Time & language → **Language & region** → **Regional format** → Change formats.
- Alternative: Control Panel → Date and Time → Change date and time.

2.4.3 Changing Display Properties

Open **Settings** → **System** → **Display** (or right-click on the Desktop → **Display settings**).

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Setting	What it does
Brightness	Makes the screen brighter or darker (mainly laptops)
Night light	Reduces blue light at night to reduce eye strain
Scale	Makes text, apps and icons bigger or smaller (100%, 125%, 150%)
Display resolution	Number of pixels shown (e.g., 1920 × 1080); choose the one marked *Recommended*
Display orientation	Landscape or Portrait
Multiple displays	Duplicate or extend the screen on a second monitor/projector (Win + P)
Advanced display	Shows refresh rate (60 Hz, 120 Hz etc.) and display information

Personalization: right-click Desktop → **Personalize** to change:

- **Background** — wallpaper as picture, solid colour or slideshow
- **Colors** — Light or Dark mode and accent colour
- **Themes** — complete look including background, colours and sounds
- **Lock screen** — lock-screen picture; **Screen saver** settings are also available here
- **Taskbar / Start** — position and appearance

2.4.4 To Add or Remove Programs and Features

A. Adding (Installing) a Program

- Download the setup file from the **official website** or use the **Microsoft Store**.
- Double-click the setup file (**setup.exe** / **.msi**) → click **Yes** if asked by User Account Control.
- Follow the installation wizard: accept the licence → choose the install location → Next → **Install** → Finish.

B. Removing (Uninstalling) a Program

- Open **Settings** → **Apps** → **Installed apps** (Windows 10: Apps & features).
- Find the program → click the **three dots (□)** → **Uninstall** → confirm.
- Alternative: **Control Panel** → **Programs** → **Programs and Features** → select the program → **Uninstall**.

C. Windows Features

Control Panel → Programs → **Turn Windows features on or off** allows optional Windows components (such as Internet Information Services, .NET Framework, Windows Sandbox) to be added or removed.

> **Exam Tip:** Deleting a program's shortcut or folder does NOT uninstall it. Always use Installed apps / Programs and Features. Install software only from trusted sources.

2.4.5 Adding, Removing & Sharing Printers

A. Adding a Printer

- Connect the printer with USB cable or switch on the Wi-Fi/network printer. Install the printer driver if required.
- Open **Settings** → **Bluetooth & devices** → **Printers & scanners** → click **Add device**.
- Select your printer from the list. If it is not listed, click **Add manually** and choose the option (network/IP address, shared printer by name, or Bluetooth).
- To check, right-click the printer → **Print a test page**. To make it the default printer, select it → **Set as default**.

B. Removing a Printer

- Open **Printers & scanners** → click the printer → **Remove** → confirm.
- Alternative: Control Panel → **Devices and Printers** → right-click the printer → **Remove device**.

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C. Sharing a Printer on a Network

- Open **Printers & scanners** → click the printer → **Printer properties** → **Sharing** tab.
- Click **Change Sharing Options** if needed → tick **Share this printer** → type a **Share name** → **Apply** → **OK**.
- Other computers connect using **Add device** → **Add manually** → **Select a shared printer by name** and typing **\\ComputerName\ShareName**.
- The computer that has the printer must be ON and both computers must be on the same network with file and printer sharing enabled.

Term	Meaning
Default Printer	Printer used automatically when you print without choosing one
Print Queue	List of documents waiting to be printed; you can pause or cancel a job
Spooler	Windows service that holds print jobs in memory/disk before sending them to the printer
Printer Driver	Software that lets Windows communicate with the printer

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2.5 File and Folder Management

> *A **file** is a collection of related data stored on a disk with a name (e.g., resume.docx). A **folder** (directory) is a container used to organize files and other folders (sub-folders). A **drive** is a storage area identified by a letter such as C: or D:.*

File Explorer (open with **Win + E**) is the Windows tool to view and manage files and folders. Its main parts: **Navigation pane** (left side: Quick access, This PC, drives), **Address bar** (path), **Search box**, **Command bar/Ribbon** (New, Cut, Copy, Paste, Rename, Delete, Sort, View) and the **File list**.

Path example: C:\Users\Ajay\Documents\Resume.docx — Drive C → Users folder → Ajay folder → Documents folder → file Resume.docx.

Common File and Folder Operations

Operation	Method	Shortcut
Create folder	Right-click empty area → New → Folder → type name	Ctrl + Shift + N
Create file	Right-click → New → choose type (Text document, Word etc.)	—
Open	Double-click the file or folder	Enter
Rename	Right-click → Rename, or select and press F2; type new name	F2
Select one / many	Click; Ctrl + click for separate items; Shift + click for a range; Select all	Ctrl + A
Copy	Select → Copy → go to destination → Paste (original remains)	Ctrl + C, Ctrl + V
Move	Select → Cut → go to destination → Paste (original removed); or drag and drop	Ctrl + X, Ctrl + V
Delete	Select → Delete (goes to Recycle Bin)	Delete
Delete permanently	Select → Shift + Delete → confirm	Shift + Delete
Restore	Open Recycle Bin → right-click the item → Restore	—
Search	Type the name in the Search box of File Explorer (use *.pdf to find all PDF files)	Ctrl + F / Ctrl + E
Properties	Right-click → Properties: shows size, type, location, dates, attributes	Alt + Enter
Compress	Right-click → Compress to ZIP file (reduces size / bundles files)	—
Undo last action	Reverses the last copy, move, rename or delete	Ctrl + Z

Rules for Naming Files and Folders

- A name can have up to 255 characters (letters, numbers, spaces, hyphen, underscore).
- A name cannot contain these characters: **\ / : * ? " < > |**
- Two files in the same folder cannot have the same name and extension.
- Windows file names are not case-sensitive (Notes.txt and notes.txt are the same).

Default Libraries / Folders

Folder	Contents
Desktop	Items shown on the desktop
Documents	Word, Excel, PDF and other documents

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Folder	Contents
Downloads	Files downloaded from the Internet
Pictures / Videos / Music	Photos, videos and audio files
Recycle Bin	Deleted files waiting to be restored or permanently removed

View and Display Options

- **View** menu: Extra large/Large/Medium/Small icons, List, Details, Tiles, Content.
- **Sort by** Name, Date modified, Type, Size; **Group by** and **Filter** are also available.
- **Show → Hidden items** and **File name extensions** can be turned on from View → Show.

> **Good Practice:** Keep files in well-named folders (e.g., Computer Course > Chapter 2), take regular backup on a pen drive/cloud, and never delete files from the Windows or Program Files folders.

SECTION 6: TYPES OF FILE EXTENSIONS

2.6 Types of File Extensions

> *A file extension is a short code after the dot in a file name (e.g., report**.docx**). It tells the operating system the type of the file and which application should open it.*

File Type	Extensions	Opened with
Text / Document	.txt, .docx, .doc, .rtf, .odt, .pdf	Notepad, MS Word, PDF reader
Spreadsheet	.xlsx, .xls, .csv, .ods	MS Excel, Google Sheets
Presentation	.pptx, .ppt, .odp	MS PowerPoint
Database	.accdb, .mdb, .sql	MS Access, MySQL
Image	.jpg / .jpeg, .png, .gif, .bmp, .svg, .webp	Photos, Paint, Photoshop
Audio	.mp3, .wav, .aac, .flac	VLC, Media Player
Video	.mp4, .mkv, .avi, .mov, .wmv	VLC, Movies & TV
Compressed / Archive	.zip, .rar, .7z	WinRAR, 7-Zip, File Explorer
Executable / Program	.exe, .msi, .bat	Runs directly (installs or starts a program)
System files	.dll, .sys, .ini, .log	Used by Windows (do not delete)
Web	.html, .css, .js	Browser, text editor
Programming	.py, .java, .c, .cpp	Code editors, IDEs
Mobile app	.apk (Android)	Android installer
Shortcut	.lnk	Opens the linked item

Image formats at a glance

Format	Features
JPG / JPEG	Compressed photos; small size; some quality loss
PNG	Lossless, supports transparent background
GIF	Supports simple animation; limited colours

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Format	Features
BMP	Uncompressed; large file size

- To see extensions: File Explorer → **View** → **Show** → **File name extensions**.
- **Be careful:** files like *invoice.pdf.exe* are dangerous — the real extension is the last one. Never open unknown .exe, .bat or .apk files.
- Changing the extension by renaming does not convert the file; use "Save as" or a converter.

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2.7 Summary

Operating System

- OS = system software that manages hardware, software, files and users, and provides the user interface.
- Functions: process, memory, file and device management, security, networking and user interface.
- Booting: Power ON → POST → BIOS/UEFI → boot loader → OS loads. Kernel = core; Shell = interface.
- Desktop OS: Windows, macOS, Linux, Chrome OS. Mobile OS: Android (Google), iOS and iPadOS (Apple).

User Interface

- Desktop has icons, wallpaper, taskbar, Start menu and Recycle Bin.
- Taskbar: Start button, search, pinned/running apps, system tray, date and time.
- A shortcut is a link with an arrow; deleting it does not delete the original file.
- Run an app by Start menu, search, desktop shortcut, taskbar or Run box (Win + R). Use Ctrl + Shift + Esc for Task Manager.

Settings

- Settings app: Win + I. Mouse: Bluetooth & devices → Mouse. Date and time: Time & language. Display: System → Display.
- Uninstall programs from Settings → Apps → Installed apps (or Control Panel → Programs and Features).
- Printers: Settings → Bluetooth & devices → Printers & scanners; share from Printer properties → Sharing tab.

Files, Folders and Extensions

- File Explorer = Win + E. Copy Ctrl+C, Cut Ctrl+X, Paste Ctrl+V, Rename F2, Delete → Recycle Bin, Shift+Delete = permanent delete.
- File name cannot contain \ / : * ? " < > |
- Extensions: .docx/.pdf (documents), .xlsx (spreadsheet), .pptx (presentation), .jpg/.png (image), .mp3 (audio), .mp4 (video), .zip (compressed), .exe (program).

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2.8 Model Questions and Answers

> *These questions are commonly asked in exams. Correct answers are marked with ✓ and an explanation is provided.*

Part A: Multiple Choice Questions (MCQs)

Q1. An Operating System is:

(a) An application software
(b) System software that manages hardware and software resources ✓
(c) A programming language
(d) An input device

Explanation: *The OS is the main system software; it manages the hardware and lets other programs run.*

Q2. Which of the following is NOT an operating system?

(a) Linux
(b) Android
(c) MS Word ✓
(d) macOS

Explanation: *MS Word is application software (word processor). The others are operating systems.*

Q3. The process of starting a computer and loading the OS into RAM is called:

(a) Formatting
(b) Booting ✓
(c) Compiling
(d) Scanning

Explanation: *Booting loads the operating system from storage into memory when the computer is switched on.*

Q4. POST stands for:

(a) Power-On Self Test ✓
(b) Primary Operating System Test
(c) Program Output Storage Test
(d) Power Off Safe Test

Explanation: *POST is the first check done by the BIOS/UEFI to test RAM, keyboard and other hardware at start-up.*

Q5. The core part of an operating system is called:

(a) Shell
(b) Kernel ✓
(c) Driver
(d) Utility

Explanation: *The kernel directly controls hardware, memory and processes; the shell is the interface to the user.*

Q6. GUI stands for:

(a) General User Interface
(b) Graphical User Interface ✓
(c) Graphic Utility Input
(d) Global User Interaction

Explanation: *A GUI uses windows, icons, menus and a pointer, e.g., Windows and Android.*

Q7. Which of the following is an open source desktop operating system?

(a) Windows 11
(b) macOS
(c) Linux ✓
(d) iOS

Explanation: *Linux's source code is freely available. Windows, macOS and iOS are proprietary.*

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Q8. macOS is developed by:

(a) Microsoft
(b) Google
(c) Apple ✓
(d) IBM

Explanation: *macOS runs on Apple Mac computers.*

Q9. Android is developed by:

(a) Apple
(b) Google ✓
(c) Microsoft
(d) Intel

Explanation: *Android is a Linux-based mobile OS led by Google.*

Q10. Which operating system runs on the Apple iPhone?

(a) Android
(b) iOS ✓
(c) Windows
(d) Linux

Explanation: *iPhone uses iOS; iPad uses iPadOS.*

Q11. By default, the Windows taskbar is placed at the:

(a) Top of the screen
(b) Bottom of the screen ✓
(c) Left of the screen
(d) Centre of the screen

Explanation: *The taskbar is at the bottom by default and holds the Start button, pinned and running apps and the system tray.*

Q12. Which shortcut key shows the desktop by minimizing all windows?

(a) Win + D ✓
(b) Win + R
(c) Alt + F4
(d) Ctrl + Esc

Explanation: *Windows key + D shows or hides the desktop.*

Q13. A shortcut icon can be recognized by:

(a) A small arrow on the icon ✓
(b) A red border
(c) A lock symbol
(d) A small star

Explanation: *A shortcut is a link to the original item and shows a small arrow in the corner.*

Q14. Which key combination opens the Run dialog box?

(a) Win + E
(b) Win + R ✓
(c) Win + I
(d) Win + L

Explanation: *Win + R opens Run, where you can type program names like notepad or calc.*

Q15. Which key combination opens Task Manager directly?

(a) Ctrl + Shift + Esc ✓
(b) Ctrl + Alt + Tab
(c) Alt + Esc
(d) Ctrl + P

Explanation: *Ctrl + Shift + Esc opens Task Manager to end a hung application.*

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Q16. Alt + Tab is used to:

(a) Close a window
(b) Switch between open applications ✓
(c) Lock the computer
(d) Take a screenshot

Explanation: *Alt + Tab quickly switches between running programs.*

Q17. Which shortcut opens Windows Settings?

(a) Win + I ✓
(b) Win + S
(c) Win + P
(d) Win + X

Explanation: *Win + I opens the Settings app.*

Q18. Double-click speed of the mouse can be changed from:

(a) Taskbar
(b) Mouse Properties — Buttons tab ✓
(c) Recycle Bin
(d) Task Manager

Explanation: *Additional mouse settings → Mouse Properties → Buttons tab has the double-click speed slider.*

Q19. India Standard Time (IST) is:

(a) UTC +1:00
(b) UTC +5:30 ✓
(c) UTC +8:00
(d) UTC −5:30

Explanation: *IST is 5 hours 30 minutes ahead of UTC.*

Q20. Screen resolution in Windows is changed from:

(a) Settings → System → Display ✓
(b) Settings → Accounts
(c) Task Manager
(d) Recycle Bin

Explanation: *Display settings contain resolution, scale, orientation and brightness.*

Q21. To uninstall a program in Windows 11 you use:

(a) Settings → Apps → Installed apps ✓
(b) Delete the desktop shortcut
(c) Empty Recycle Bin
(d) Rename the folder

Explanation: *Deleting a shortcut does not remove the program; it must be uninstalled from Installed apps or Programs and Features.*

Q22. A printer can be shared with others on the network using the:

(a) Sharing tab of Printer Properties ✓
(b) Display tab
(c) Security tab of Task Manager
(d) Startup folder

Explanation: *Printer Properties → Sharing → 'Share this printer' gives it a share name.*

Q23. A file deleted with the Delete key normally goes to the:

(a) Desktop
(b) Recycle Bin ✓
(c) Documents
(d) Start menu

Explanation: *Deleted files stay in the Recycle Bin and can be restored.*

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Q24. Which key combination deletes a file permanently, bypassing the Recycle Bin?

(a) Ctrl + Delete
(b) Shift + Delete ✓
(c) Alt + Delete
(d) Tab + Delete

Explanation: *Shift + Delete removes the item permanently after confirmation.*

Q25. The extension .jpg or .png belongs to which type of file?

(a) Audio
(b) Image ✓
(c) Video
(d) Executable

Explanation: *JPG/JPEG and PNG are image formats.*

Part B: True or False

#	Statement	Answer
1	Deleting a shortcut icon deletes the original program.	False — only the link is deleted.
2	Linux is an open-source operating system.	True
3	Android and iOS are mobile operating systems.	True
4	Alt + Tab closes the active window.	False — it switches between open apps (Alt + F4 closes).
5	A file name can contain the character ?	False — \ / : * ? " < > | are not allowed.
6	Shift + Delete sends the file to the Recycle Bin.	False — it deletes the file permanently.

Part C: Short Answer Questions

Q1. What is an operating system? Name any four of its functions.

Ans: An operating system is system software that manages the hardware and software of a computer and acts as an interface between user and hardware. Functions: process management, memory management, file management, device management, security and user interface.

Q2. What is booting? Explain the steps in brief.

Ans: Booting is the process of starting the computer and loading the OS into RAM. Steps: power ON → POST (hardware check) → BIOS/UEFI finds boot device → boot loader loads the kernel → the OS loads and the desktop appears.

Q3. Differentiate between CLI and GUI.

Ans: CLI needs text commands typed by the user (Command Prompt). GUI uses windows, icons, menus and a mouse, so it is easier for beginners (Windows).

Q4. Name any four desktop operating systems and two mobile operating systems.

Ans: Desktop: Windows, macOS, Linux, Chrome OS. Mobile: Android and iOS.

Q5. What is a taskbar? Name its main parts.

Ans: The taskbar is the bar at the bottom of the screen. It has the Start button, Search, pinned and running apps, notification area (system tray) and date/time.

Q6. What is the difference between an icon and a shortcut?

Ans: An icon represents the actual file/folder/program. A shortcut is only a link with a small arrow that opens the original; deleting a shortcut does not delete the original.

Q7. How can an application be run in Windows? Write any three methods.

Ans: (1) Start menu → select the app, (2) double-click its desktop shortcut, (3) press Win + R, type the program name and press Enter. Other ways: Search and taskbar.

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Q8. Write the steps to change the system date and time.

Ans: Right-click the clock on the taskbar → Adjust date and time → turn off Set time automatically → click Change
→ set date and time → Change. Choose the India time zone (UTC+05:30).

Q9. How can you uninstall a program in Windows 11?

Ans: Settings → Apps → Installed apps → click the three dots next to the program → Uninstall → confirm. Alternatively use Control Panel → Programs and Features.

Q10. Write the steps to add and share a printer.

Ans: Settings → Bluetooth & devices → Printers & scanners → Add device → select printer. To share: Printer properties → Sharing tab → Share this printer → give a share name → Apply → OK.

Q11. What is a file extension? Give examples.

Ans: An extension is the letters after the dot in a file name that show its type, e.g., .docx (Word), .xlsx (Excel), .jpg (image), .mp3 (audio), .exe (program).

Part D: Long Answer Questions (Practice)

- Define an operating system. Explain its functions and types in detail.
- Explain the booting process of a computer with steps.
- Compare Windows, macOS and Linux. Compare Android and iOS.
- Explain the parts of the Windows desktop and the taskbar.
- Explain how to change mouse properties, date and time, and display settings.
- Explain file and folder operations in File Explorer. Write any ten file extensions with their types.

Best of Luck for Your Exam!

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