

# YOUTUBE – TEACHING EXAM GUIDE BY SHUBHAM SIR

## Chapter 1: Introduction to ICT

Hello students! Ever wondered how a single click can send your message across the world? That's the magic of ICT, and today, we're going to become the magicians!

### Core Concepts (The Foundation Stones)

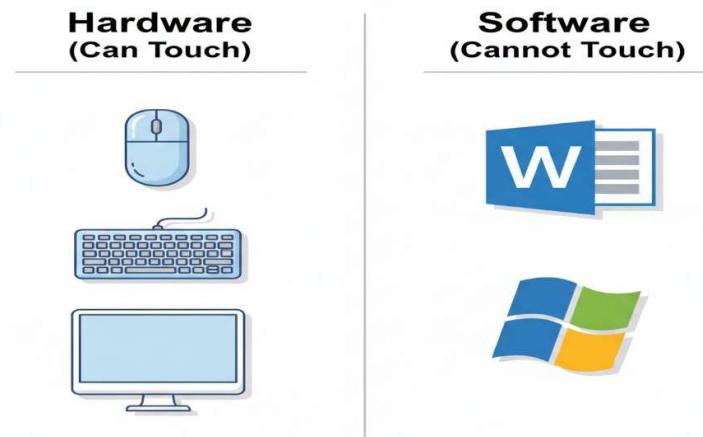
- **Information (सूचना):** When we arrange data in a meaningful way, it becomes information. Think of it as raw ingredients (data) being cooked into a delicious dish (information).
  - *Example:* "Rohan, Class 9, Age 14" is data. "Rohan is a 14-year-old student in Class 9" is information.
- **Communication (संचार):** This is simply the act of sharing or exchanging information. It can be through speaking, writing, or using any medium. For any communication to happen, you need a Sender, Message, Medium, and a Receiver.
- **Technology (प्रौद्योगिकी):** This refers to any device, system, or method that is a result of scientific knowledge used for practical purposes. Your smartphone is a perfect example of technology!
- **What is ICT?** When we combine these three, we get **Information and Communication Technology (ICT)**. It includes all the technologies we use to create, store, share, or exchange information electronically.
  - *Examples:* Radio, TV, Computers, Smartphones, Internet.

### Why is ICT Important? (Ye Zaroori Kyun Hai?)

- **Connects Everyone:** ICT allows us to communicate with anyone, anywhere, anytime. (Think WhatsApp video calls to your relatives!).
- **Creates and Shares:** You can create documents, images, videos and share them easily.
- **Stores and Organizes:** It helps us store huge amounts of information digitally (like your grandfather's stamp collection scanned and saved on a computer).
- **Learning Hub:** Provides endless opportunities to learn anything you want through online courses, e-books, and educational videos.

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## Hardware vs. Software



- **Hardware (हार्डवेयर):** The physical parts of a computer system that you can touch.
  - **Input Devices (इनपुट डिवाइस):** Used to give data *to* the computer.
    - Examples: Keyboard, Mouse, Scanner, Microphone, Joystick.
    - **PYQ Spotlight:** The EMRS PGT (History) 2023 exam asked to identify a set of *only* input devices. The correct option was **Keyboard, Mouse, Scanner**. This is a very important topic!
  - **Output Devices (आउटपुट डिवाइस):** Used to get results *from* the computer.
    - Examples: Monitor, Printer, Speaker, Projector.
    - **PYQ Spotlight:** The EMRS PGT (History) 2023 exam also asked to identify a primary output device, where the answer was **Projector**.
  - **Networking Devices (नेटवर्किंग डिवाइस):** Used to connect computers and other devices together.
    - Examples: Router, Switch.
    - **PYQ Spotlight:** The EMRS TGT 2023 exam asked what a Switch is. The answer was a **Networking device**.

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- **Software (सॉफ्टवेयर):** A set of instructions that tells the hardware what to do. You cannot touch it.
  - **System Software (सिस्टम सॉफ्टवेयर):** Manages the computer hardware and provides a platform for applications. The most important one is the **Operating System (OS)**.
    - Examples: Windows, Linux, Android.
    - **PYQ Spotlight:** The EMRS PGT (Physics) 2023 exam asked to identify an example of system software. The correct answer was **Operating System**.
  - **Application Software (एप्लीकेशन सॉफ्टवेयर):** Designed to perform a specific task for the user.
    - Examples: MS-PowerPoint, Tally, Web Browsers.
    - **PYQ Spotlight:** A question in the EMRS PGT (History) 2023 exam asked to identify application software from a list. The answer was **MS-PowerPoint**.

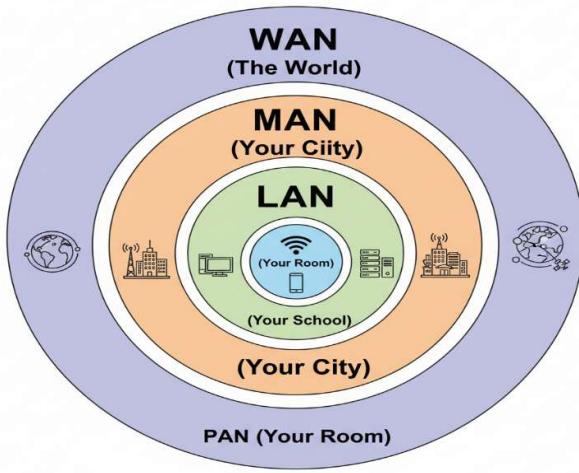


### SHUBHAM SIR Mnemonic (Memory Trick)

Struggling to remember the different types of Networks? Just remember your mobile **PLAN** for the internet! It's a lifesaver!

- **P - PAN (Personal Area Network):** Your personal bubble! Connecting your phone to Bluetooth headphones is a PAN. Super small area.
  - **PYQ Spotlight:** The EMRS PGT (Physics) 2023 exam directly asked what kind of network is formed when two phones are connected via Bluetooth. The answer is **PAN**.
- **L - LAN (Local Area Network):** Think of a single building, like your school's computer lab or your home Wi-Fi.
  - **PYQ Spotlight:** The EMRS TGT 2023 exam asked what type of network is created by connecting 20 computers in a school lab. The answer is **LAN**.
- **M - MAN (Metropolitan Area Network):** This covers a whole city. Think of the cable TV network in your city.
- **W - WAN (Wide Area Network):** The biggest of them all! It covers entire countries and continents. The **Internet** is the best example of a WAN.

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- **Software ke Types:**

- **System Software (सिस्टम सॉफ्टवेयर):** Yeh computer ko chalane wala main software hai. Iske bina computer ek dibba hai.

Example: **Operating System (OS)** jaise Windows, Android, Linux.

- **Application Software (एप्लीकेशन सॉफ्टवेयर):** Yeh woh software hai jo hum apne specific kaam ke liye use karte hain. Inhe 'Apps' bhi kehte hain.

Example: MS Word, Google Chrome, Photoshop.

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## **★ Guru's Gyan (Exam Prediction)**

Based on the pattern, get ready for these two types of questions in your exam:

1. **Identify the Odd One Out:** They will give you a list of four items, three of which belong to one category (e.g., input devices) and one does not. You'll have to find the odd one.
2. **Classification:** You will be given a device or software (like 'Router' or 'MS-Word') and asked to classify it correctly (Networking Device, Application Software, etc.). Master the tables and examples in this chapter!

## **TRICK**

 RAM aur ROM mein confusion? Bas itna yaad rakho: **RAM** hai Room Aapka Mehman (Guest Room). Mehmaan aate jaate rehte hain (temporary data). **ROM** hai Room Of Mummy (Mummy ka kamra). Uski cheezin permanent rehti hain, aap hila nahi sakte! Simple hai na?

## **Chapter Summary**

1. ICT is using technology to manage and communicate information electronically.
2. ICT has applications in almost every field, from education and health to business and administration.
3. You must know the clear difference between **Hardware & Software**, and between **System Software & Application Software**.
4. Understanding the scale of computer networks (**PAN, LAN, MAN, WAN**) is crucial and frequently asked.

**PRACTICE QUESTIONS.**

1. What does 'C' stand for in ICT?

- (A) CommunicationSSS
- (B) Computer
- (C) Creation
- (D) Connectivity

**Answer: (A) Communication**

2. Which of the following is considered 'data'?

- (A) A student's final report card
- (B) A list of names without context
- (C) A weather forecast report
- (D) A news article

**Answer: (B) A list of names without context**

3. Which of the following is an example of an output device?

- (A) Mouse
- (B) Keyboard
- (C) Printer
- (D) Scanner

**Answer: (C) Printer**

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4. The software that manages all the hardware resources of a computer is called:

- (A) Application Software
- (B) Utility Software
- (C) System Software
- (D) Firmware

**Answer: (C) System Software**

5. A network that connects computers within a single school building is known as a:

- (A) WAN
- (B) MAN
- (C) PAN
- (D) LAN

**Answer: (D) LAN**

6. Which of the following is primarily an input device?

- (A) Monitor
- (B) Speaker
- (C) Projector
- (D) Microphone

**Answer: (D) Microphone**

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7. MS Word and MS PowerPoint are examples of:

- (A) System Software
- (B) Operating Systems
- (C) Application Software
- (D) Utility Software

**Answer: (C) Application Software**

8. The Internet is the largest example of which type of network?

- (A) LAN
- (B) WAN
- (C) MAN
- (D) PAN

**Answer: (B) WAN**

9. Connecting your smartphone to your car's Bluetooth system creates a:

- (A) LAN
- (B) PAN
- (C) MAN
- (D) WAN

**Answer: (B) PAN**

**10. Which device directs traffic between different networks?**

- (A) Switch
- (B) Hub
- (C) Router
- (D) Monitor

**Answer: (C) Router**

## Chapter 1:(part2)

### **Core Concepts (The Engine Room)**

To understand the computer, let's learn its language first, then meet the parts that use it.

#### **1. How Computers Think:**

**The Language of Zeroes and Ones (डेटा निरूपण)**

Computers don't speak English or Hindi. They speak the language of electricity, which has only two states: **ON (1)** or **OFF (0)**. This two-digit system is called **Binary**.

- **Bit (बिट)**: The smallest piece of data. Think of it as a single light switch that can be either on or off.
- **Byte (बाइट)**: A group of **8 bits**. A byte is the basic unit used to represent a character, like the letter 'A' or the number '5'.

#### **2. The Brain of the Operation: CPU (सेंट्रल प्रोसेसिंग यूनिट)**

The **Central Processing Unit (CPU)** is the master brain that reads and executes instructions. It's connected to everything else via the **motherboard**, the computer's main circuit board. The CPU itself has two key assistants:

- **Arithmetic Logic Unit (ALU)**: The master mathematician. It handles all calculations (addition, subtraction) and logical comparisons (is X greater than Y?).

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- **Control Unit (CU):** The project manager or traffic cop. It doesn't do any processing itself but directs the flow of data, telling the memory, ALU, and other devices what to do and when.

## **The Desk Analogy: Understanding Computer Memory**

Imagine you are the **CPU**, the worker. Your desk and filing cabinet are the computer's memory.

### Primary Memory (Your Desk - प्राथमिक मेमोरी)

This is the main, super-fast memory that the CPU works with directly. It's your active workspace.

- **RAM (Random Access Memory):** This is your **desktop**. When you want to work on a file (a program or document), you take it from the filing cabinet and put it on your desk.
  - It's incredibly fast to access things on your desk.
  - It's **volatile**—when you go home (turn off the power), your desk is cleared completely.
  - **💡 PYQ Spotlight:** The EMRS PGT (CS) 2023 exam asked which type of memory is volatile. The answer is **RAM**.
- **ROM (Read-Only Memory):** This is your **instruction manual** that's permanently stuck to the desk. It contains the essential instructions for starting up the computer (a process called **booting**).
  - You can only read it; you can't change it.
  - It's **non-volatile**—the manual stays there even when the power is off.

### Secondary Memory (Your Filing Cabinet - द्वितीयक मेमोरी)

This is where you store all your files for the long term. It's slower to access than your desk, but it can hold vast amounts of data permanently.

- **Hard Disk Drive (HDD):** A traditional filing cabinet with spinning metal disks. Stores a lot, but takes time to find a file.
- **Solid State Drive (SSD):** A modern cabinet with shelves and no moving parts. It finds and opens files much, much faster than an HDD.

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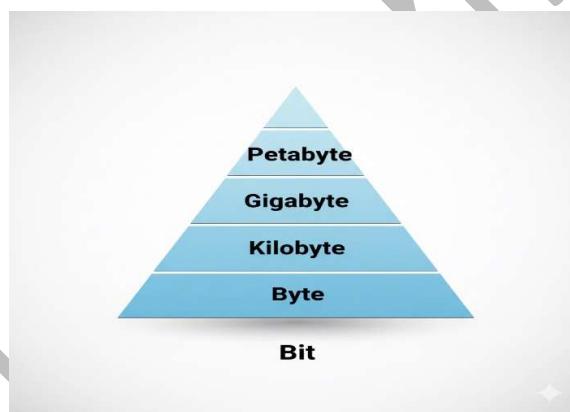
- **Flash Drives (Pen Drive, Memory Card) & Optical Disks (CD/DVD):** These are like portable folders you use to carry files from one cabinet to another.

### TRICK

To remember the order of data units, just think of this sentence:

"Brave Kids Make Good Team Players!"

- **B - Byte**
- **K - Kilobyte (KB)**  $\approx$  1 thousand bytes
- **M - Megabyte (MB)**  $\approx$  1 million bytes
- **G - Gigabyte (GB)**  $\approx$  1 billion bytes
- **T - Terabyte (TB)**  $\approx$  1 trillion bytes
- **P - Petabyte (PB)**  $\approx$  1 quadrillion bytes



★ Guru's Gyan

(EMRS Exam Prediction)

Based on previous patterns, prepare for these question types:

1. **Full Forms:** You will be asked for the full forms. Don't lose these easy marks!
  - **Top Priority:** CPU, RAM, ROM, ALU, CU, HDD, SSD.
2. **Difference Between...:** Be ready to distinguish between key pairs.
  - **RAM vs. ROM** (Volatile vs. Non-volatile, Read/Write vs. Read-Only).
  - **Primary vs. Secondary Memory** (Speed, Volatility, Capacity).

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- HDD vs. SSD (Speed, Technology).
- 3. **Component Function:** They'll describe a job and you'll name the part.
  - "Which component performs calculations?" -> **ALU**
  - "Which memory is used for booting the computer?" -> **ROM**
  - "Which unit directs the flow of data?" -> **CU**

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### **Chapter Summary**

- A computer's hardware is connected by the **motherboard**, and it understands only **binary** (0s and 1s).
- The **CPU** is the brain, using its **ALU** for math and its **CU** for control.
- **RAM** is fast, temporary (volatile) memory, like a workspace desk.
- **ROM** is permanent (non-volatile) memory with startup instructions, like a manual.
- **Secondary Storage** (HDD, SSD) is for long-term, permanent file storage, like a filing cabinet.

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## Chapter 2: Creating Textual Communication

### Introduction

- **Word Processor (वर्ड प्रोसेसर):**

This is a software used to create digital documents. Think of it as your magical digital notebook.

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The most common examples are **MS Word** or the open-source **LibreOffice Writer**.

### **A Closer Look at the Word Processor Window**

- Before we start writing, let's get familiar with our main tools, which are usually found in the **Ribbon**.
- **Ribbon (रिबन):**

This is the large panel at the top of the window that organizes commands into a set of **Tabs** (like **Home**, **Insert**, **Page Layout**). The **Home Tab** is where you'll find the most common formatting tools.

- **Quick Access Toolbar:**

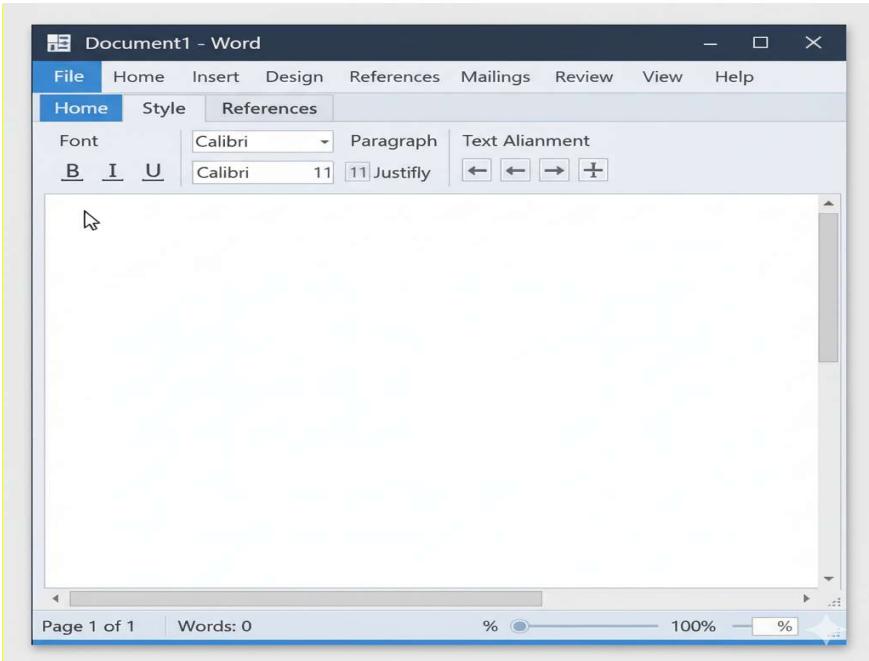
A small toolbar at the very top-left, which contains shortcuts for common commands like **Save**, **Undo**, and **Redo**.

- **Status Bar:**

The bar at the bottom of the window that shows information like the **current page number**, **word count**, and **zoom level**.

- **💡 PYQ Spotlight:** A common question in competitive exams is: "In which tab of the Ribbon would you find the options for Bold, Italic, and Font size?" The answer is the **Home Tab**.

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### **File Formats (फाइल फॉर्मेट):**

Every file has a 'surname' or an extension, which tells us what type of file it is.

- **.docx:** This is the format for MS Word.
- **.odt:** This is the format for OpenOffice/LibreOffice Writer.
- **.pdf:** Stands for **Portable Document Format**. This is a 'read-only' format, which means it cannot be easily edited.
- **.txt:** This is the simplest text file, which contains no formatting (like color, bold, etc.).

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**PYQ Spotlight:** The EMRS TGT 2023 exam asked, "Which of the following is NOT an audio file extension?" One of the options was **.pdf**. This shows how important it is to know your file formats!

- **Formatting (फॉर्मेटिंग):**

This is the process of making your document look beautiful and organized. It includes:

- **Font:** The style of your text (like Times New Roman, Arial).
- **Alignment (संरेखणा):** How your paragraph is set on the page – **Left, Right, Center, or Justify.**
- **Bold (बोल्ड), Italic (इटैलिक), <u>Underline</u> (अंडरलाइन):** Used to highlight text.

- **Editing Tools (संपादन उपकरण):**

- **Cut, Copy, Paste (कट, कॉपी, पेस्ट):** Used to move or duplicate text.

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- **Find & Replace (दृढ़े और बदलें)**: A time-saving tool to find a specific word in the document and replace it with another word.
- **Spelling & Grammar (वर्तनी और व्याकरण)**: A red wavy line indicates a spelling mistake, while a green (or blue) wavy line indicates a grammatical mistake.
- **Thesaurus (Shift+F7)**: A brilliant tool that suggests synonyms (words with similar meanings) for a selected word.

### **Going Beyond Text: Inserting Objects**

A great document often includes more than just text! You can insert various objects from the **Insert Tab**.

- **Tables (तालिका)**: Used to organize data into rows and columns. This is perfect for creating timetables, lists, or comparisons.
- **Images (छवि)**: You can insert pictures from your computer to make your document more engaging and informative.

 **PYQ Spotlight:** A question in an exam following the EMRS pattern asked: "To insert a table into a document, which tab on the Ribbon should you select?" The correct answer is the **Insert Tab**.

### **Essential Features: Headers and Footers**

- **Header (हेडर)**: Text that appears at the **top** of every page (e.g., chapter title).
- **Footer (फुटर)**: Text that appears at the **bottom** of every page (e.g., page number).

This feature is also found in the **Insert Tab** and is essential for creating professional reports and notes.

### **Memory Trick**

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Confused about the shortcut keys for Cut, Copy, and Paste? Don't worry! Just remember this simple trick:

- **Copy (ctrl + c):** C is for Copy. Simple!
- **Cut (ctrl + x):** The letter X looks like a pair of scissors , which "cuts" the text!
- **Paste (ctrl + v):** After cutting or copying, you need to "paste" the text. Just remember this is the final, very important step.

 **PYQ Spotlight:** The function of **ctrl + v** was asked in both the EMRS TGT & PGT 2023 exams. This is a viral question for exams!

### **Most Likely to be Asked**

1. **Shortcut Keys:** The functions of Ctrl + C, Ctrl + V, Ctrl + X, and Ctrl + P (Print). You should know these even in your sleep.
2. **File Extensions:** They will ask you to identify which of the options is (or is not) a document, image, or audio file extension.
3. **Basic Definitions:** What is a Word processor? What is open-source software (like LibreOffice Writer)?
4. **Formatting Tools:** "Which tool is used to bring the text to the center of the page?" (Answer: Center Alignment).
5. **PDF Full Form:** The full name of PDF (**Portable Document Format**) and its primary use (non-editable, universal viewing).
6. **Ribbon Tabs:** They will ask which tab contains a specific function.
7. "Formatting tools like Bold/Italic are in the..." (**Home Tab**).
8. "Tables, Images, Headers, and Footers are added from the..." (**Insert Tab**).
9. **Headers vs. Footers:** "To add a page number at the bottom of every page, what should you use?" (Answer: **Footer**).

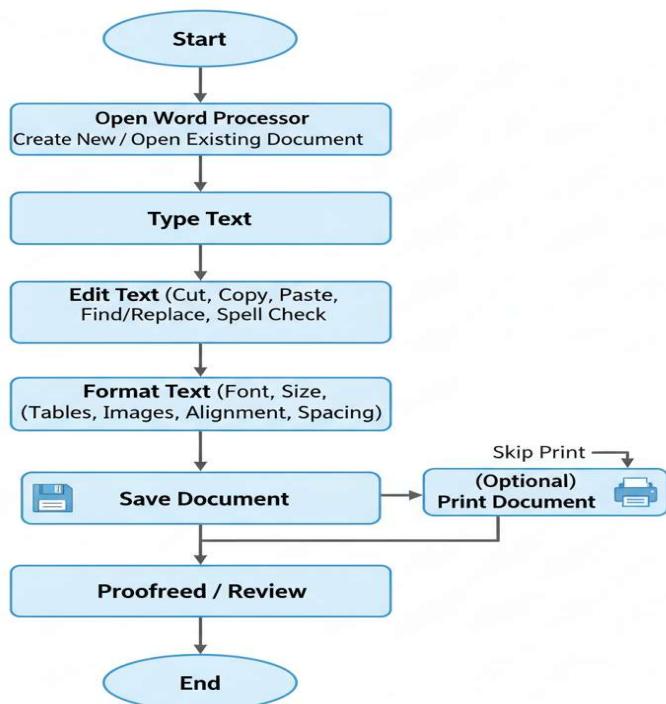
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### **5. Chapter Summary (In a Nutshell)**

- A **Word Processor** (like MS Word) is used to create digital documents.

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- **Shortcut keys** (Ctrl + C, Ctrl + V) are extremely important for the exam.
- Every file has a **format** (surname), such as **.docx** and **.pdf**.
- We use **Formatting** (Bold, Italic, Alignment, etc.) to make our documents look professional and attractive.
- The **Home Tab** is for formatting, while the **Insert Tab** is for adding objects like tables, images, headers, and footers.



## Chapter 3: Creating Visual Communication

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### 1. Your Digital Canvas: Presentation Software (प्रेजेंटेशन सॉफ्टवेयर)

A **Presentation Software** is an application used to create a sequence of slides that contain text, images, charts, and other visual elements to convey information to an audience. Think of it as a digital flipbook or a modern slide projector.

- **Popular Examples:** Microsoft PowerPoint, Google Slides, LibreOffice Impress.
- **The Building Block:** A presentation is made up of individual pages called **Slides (स्लाइड)**.

#### **The Presentation Workspace: Your Command Center**

When you open a presentation software like PowerPoint, you work in what is called the **Normal View**. This view has three main parts that you must know.

- **Slide Pane:** A column on the left that shows small thumbnail images of all your slides in order. You can click on a thumbnail to jump to that slide or drag them to reorder your presentation.
- **Main Slide Area:** The large central area where you create and edit the content of the currently selected slide. This is your primary workspace.
- **Notes Pane:** A small box below the Main Slide where you can type private notes for yourself (the speaker). These notes are not visible to the audience during the slideshow.

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### 2. Starting Your Presentation: The First Steps

#### **Choosing a Design**

You can start a presentation in two ways:

1. **Blank Presentation:** A completely clean slate where you choose all colors and fonts yourself.
2. **Design Templates:** Professionally designed, pre-made presentations with set colors, fonts, and layouts. Using a template saves a lot of time and makes your presentation look consistent and polished right from the start.

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### **Understanding Slide Layouts (स्लाइड लेआउट)**

A **Slide Layout** is the arrangement of placeholders for text, images, charts, and other content on a slide. Choosing the right layout is the first step after adding a new slide.

- **Common Layouts:**

- **Title Slide:** For the main title of your presentation.
- **Title and Content:** The most common layout, with a heading and a large area for text or visuals.
- **Two Content:** For comparing two things side-by-side.

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### **3. Core Concepts: The Visual Toolbox**

The magic of a presentation comes from adding different visual elements. Most of these are found in the **Insert Tab**.

- **Images (छवि):** Adding pictures from your computer to make your slides more interesting and easier to understand.
- **Shapes (आकार):** Using basic geometric shapes like arrows, circles, and squares to create simple diagrams or highlight information.
- **Charts (चार्ट):** A powerful tool to represent data visually. Common types include:
  - **Bar Chart:** For comparing quantities.
  - **Pie Chart:** For showing parts of a whole (percentages).
- **SmartArt Graphics:** This is a fantastic tool for creating professional-looking diagrams with just a few clicks. It's perfect for showing processes, cycles, lists, or hierarchies.
- **Multimedia (मल्टीमीडिया):** You can also insert **Audio** files for background music or narration, and **Video** files to play directly within your slide.

 **PYQ Spotlight:** A question in the **EMRS PGT (History) 2023** exam asked to identify an example of application software, and the correct option was **MS-**

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**PowerPoint.** This shows that identifying presentation software is a key exam topic.

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### 4. Adding Motion: Transitions and Animations

This is what makes a presentation dynamic and engaging. It's crucial to understand the difference between the two.

- **Slide Transition (स्लाइड ट्रांज़िशन):** This is the visual effect that appears when you move from **one slide to the next** during a presentation. Think of it as turning the page of a book in a stylish way (e.g., Fade, Push, Wipe).
- **Animation (एनिमेशन):** This is the visual effect applied to **individual objects on a slide**, like text, images, or shapes. You can make them fly in, fade out, or spin.

### **Viewing and Presenting Your Show**

PowerPoint provides different **Views** for different tasks.

- **Normal View:** The default view for creating and editing slides.
- **Slide Sorter View:** This view displays all your slides as thumbnails on a single screen. It's perfect for reviewing the flow of your presentation and easily **reordering, deleting, or duplicating slides** by dragging them.
- **Slide Show View (F5):** This is the full-screen view used to present your show to the audience.

**💡 PYQ Spotlight:** The shortcut key to **start the slideshow from the beginning** is F5. This was asked in the **EMRS TGT 2023** exam. To start the slideshow from the **current slide**, the shortcut is **Shift + F5**.

**💡 PYQ Spotlight:** A very common exam question is: "The effect applied to objects on a slide to control their entry and exit is called...?" The correct answer is **Animation**.

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### 5. Presenting Your Masterpiece

Once your slides are ready, it's time for the show!

**TELEGRAM @shubhamTEG**

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- **Starting the Slideshow:** To present your slides in full-screen mode, you press a specific function key.

- **File Formats (फाइल फॉर्मेट):**

- **.pptx:** The standard format for Microsoft PowerPoint presentations.
- **.odp:** The format for LibreOffice Impress presentations.
- **.ppsx:** A PowerPoint Show file that opens directly into presentation mode.

 **PYQ Spotlight:** The shortcut key to start a presentation from the beginning is one of the most frequently asked questions in computer literacy exams. The correct answer is the **F5 key**. This was asked in the **EMRS TGT 2023** exam.

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### **6. Most Likely to be Asked**

For your EMRS exam, mark these topics as "very important" from this chapter:

1. **Shortcut Keys:**

- **F5:** Start the slideshow from the beginning.
- **Ctrl + M:** Insert a new slide.

2. **File Extensions:** You must know **.pptx** is for PowerPoint.

3. **The Core Difference:** Be absolutely clear on **Transition (for slides) vs. Animation (for objects)**. This is a guaranteed question area.

4. **Ribbon Tabs:** Know where to find things.

- "To insert a new picture, chart, or SmartArt, you would go to the..." (**Insert Tab**).
- "Effects for moving between slides are found in the..." (**Transitions Tab**).

5. **Basic Definitions:** What is a slide? What is presentation software?

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### **7. Chapter Summary (In a Nutshell)**

- **Presentation Software** (like MS PowerPoint) is used to create visual presentations using **Slides**.

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- You can insert various visual elements like **Images, Shapes, Charts, and SmartArt** from the **Insert Tab**.
- **Transitions** are effects between slides, while **Animations** are effects on objects within a slide.
- The **F5 key** is the universal shortcut to start the slideshow.
- The standard file extension for a PowerPoint presentation is **.pptx**.

## **Chapter 4: Creating Audio-Video Communication (Comprehensive Guide)**

### **1. Understanding Multimedia (मल्टीमीडिया)**

**Multimedia** is the use of a computer to present and combine **text, graphics, audio, and video** with links and tools that let the user navigate, interact, create, and communicate. Simply put, when we mix text, sound, images, animation, and video, it's called multimedia. It's far more engaging than a plain textbook, isn't it?

This chapter focuses on two powerful, free, and open-source tools: **Audacity** for audio and **OpenShot** for video.

---

### **2. Mastering Audio with Audacity (ऑडिसिटी)**

**Audacity** is a free and open-source digital audio editor and recording application. It's your personal sound studio!

The **Audacity Workspace**

When you open Audacity, you'll see a few key areas:

- **Transport Toolbar:** This has the main controls, just like a music player: **Record (●), Play (▶), Pause (■), Stop (■)**.
- **Track View / Timeline:** This is the main area where you see your audio as a waveform. You do all your editing here.
- **Editing Tools:** Includes the **Selection Tool** (to select parts of the audio), **Envelope Tool** (to change volume over time), etc.

### **3.The Audio Production Workflow**

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1. **Record (रिकॉर्ड)**: Use the record button to capture your voice or any other sound through a microphone.
2. **Edit (संपादन)**: This is where the magic happens.
  - **Trimming**: Select and delete unwanted parts from the beginning or end of your recording.
  - **Cutting**: Remove mistakes like coughing, long pauses, or saying "umm" from the middle of the recording.
  - **Noise Reduction**: A powerful feature to remove constant background noise (like fan hum) from your audio, making it sound clean and professional.
3. **Mix (मिक्स)**: Import a second audio file (like background music) and it will appear on a new track. You can adjust the volume of each track so your voice is clear over the music.
4. **Export (एक्सपोर्ट)**: Once your audio is perfect, you export it into a universal, playable format.

### **4.Saving vs. Exporting in Audacity: A Crucial Difference!**

- **Save Project (File -> Save Project)**: This saves your work as an .aup file. This is an Audacity Project file—it's **not an audio file**. It saves all your tracks and edits so you can continue working later. You cannot play this file on your phone or music player.
- **Export Audio (File -> Export)**: This converts your project into a standard, playable audio file like .mp3 or .wav. This is the final step to create an audio file that you can share or use in other applications.

**💡 PYQ Spotlight:** Remember the EMRS TGT 2023 exam asked to identify a non-audio file format? The options often include .mp3, .wav, and .ogg (which are audio formats). Knowing these extensions is a viral topic for exams!

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### **5. Mastering Video with OpenShot (ओपनशॉट)**

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**OpenShot** is a free and open-source video editor. It's your personal movie-making studio!

### **The OpenShot Workspace**

The interface is designed for easy video creation:

- **Project Files Window:** This is where you import and manage all your media—video clips, images, and audio files.
- **Video Preview Window:** This shows you what your final video will look like as you build it.
- **Timeline (टाइमलाइन):** This is the most important area, at the bottom of the screen. Here, you arrange your media in sequence.

### **6. Working with the Timeline: Layers and Tracks**

The timeline consists of multiple **tracks** (layers). You can place different types of media on different tracks. This allows you to overlay them.

- **Track 1 (Bottom):** Background Music (Audio)
- **Track 2:** Main Video Clips
- **Track 3 (Top):** Text Titles or Logos

### **7. The Video Production Workflow (Mnemonic)**

Remember the 3-step movie formula: "India Talent Exports!"

1. **I - Import (इम्पोर्ट):** Bring all your photos, video clips, and audio files into the Project Files window.
2. **T - Timeline:** Drag and arrange your media onto the Timeline in the correct sequence. Use the **Razor Tool** to split clips and remove unwanted parts.
3. **E - Export (एक्सपोर्ट):** Once your movie is perfectly arranged, export the entire timeline as a single, playable video file.

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### 8.Adding Transitions (ट्रांज़िशन)

Transitions are effects used to create a smooth change from one video clip to the next (e.g., Fade In, Fade Out, Wipe). They make your video look more professional.

### 9.Saving vs. Exporting in OpenShot

- **Save Project:** This saves your work as an .osp file (OpenShot Project). This file is **not a video**. It just saves the arrangement of clips on your timeline so you can edit it later.
- **Export Video:** This renders your entire timeline project into a standard video file like .mp4. This is the final, shareable movie file.

---

### **Most Likely to Ask**

1. **Software Identification:** "Audacity is a software for...?" (Answer: Audio Editing). "Which of the following is a free video editor?" (Answer: OpenShot).
2. **File Formats:** Know the difference between **Project Files** (.aup, .osp) and **Exported Files** (.mp3, .mp4). This is a key distinction.
3. **Key Terminology:** What is 'Multimedia'? What is a 'Timeline' in video editing? What is 'Noise Reduction' in audio editing?
4. **Process and Workflow:** "What is the function of tracks/layers in video editing?" "What is the difference between saving a project and exporting a file?"
5. **Open Source Tools:** Be able to identify NCERT-mentioned open-source tools like Audacity, OpenShot, and GIMP (an image editor).

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### 10. Chapter Summary (In a Nutshell)

- **Multimedia** is a combination of text, images, audio, and video.

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- **Audacity** is a free tool to record, edit (e.g., noise reduction), and mix audio. You **save** the project as an .aup file but **export** the final audio as an .mp3.
  - **OpenShot** is a free tool to create videos. You **import** media, arrange it on a multi-track **Timeline**, and add transitions.
  - You **save** an OpenShot project as an .osp file but **export** the final video as an .mp4.
  - The video editing process is: **Import -> Arrange on Timeline -> Export.**
- 

### **MCQ Question Bank (For Practice)**

*(Includes the 15 questions from your original notes for a complete study package)*

1. Which of the following is a free and open-source digital audio editor?
  - (A) OpenShot
  - (B) GIMP
  - (C) Audacity
  - (D) MS PowerPoint

Answer: (C) Audacity
2. In video editing, what is the area where you arrange your clips in sequence called?
  - (A) Canvas
  - (B) Layer
  - (C) Timeline
  - (D) Toolbox

Answer: (C) Timeline
3. Which of the following is a common file format for a final, shareable video?

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(A) .aup

(B) .xcf

(C) .mp4

(D) .mp3

Answer: (C) .mp4

**4. The term 'Multimedia' refers to:**

(A) Using only text

(B) Using only video

(C) Using a combination of text, images, audio, and video

(D) Using a fast computer

Answer: (C) Using a combination of text, images, audio, and video

**5. What is the main function of OpenShot Video Editor?**

(A) To edit images

(B) To record and edit audio

(C) To create and edit video files

(D) To create text documents

Answer: (C) To create and edit video files

**6. To save an audio file from Audacity in a format that can be played on a mobile phone, you should use:**

(A) File -> Save Project

(B) File -> Export Audio

(C) Edit -> Save

(D) Track -> Save

Answer: (B) File -> Export Audio

**7. Which of the following is NOT a type of multimedia content?**

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- (A) Animation
- (B) Audio
- (C) Plain Text (.txt file)
- (D) Video

Answer: (C) Plain Text (.txt file) (as it lacks combination with other media)

### **8. What is the purpose of "mixing" tracks in Audacity?**

- (A) To delete the audio
- (B) To combine a voice recording with background music
- (C) To increase the file size
- (D) To change the file format

Answer: (B) To combine a voice recording with background music

### **9. The default project file for Audacity is saved with which extension?**

- (A) .mp3
- (B) .wav
- (C) .aup
- (D) .aud

Answer: (C) .aup

### **10. The first step in creating a video film on a topic is:**

- (A) Exporting the video
- (B) Adding transitions
- (C) Collecting relevant information and media
- (D) Recording audio

Answer: (C) Collecting relevant information and media

### **11. Effects like 'Fade In' and 'Fade Out' between two video clips are called:**

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(A) Transitions

(B) Layers

(C) Filters

(D) Timelines

Answer: (A) Transitions

**12. The mp3 file format is used for:**

(A) Video files

(B) Audio files

(C) Image files

(D) Text documents

Answer: (B) Audio files

**13. Which of the following is a key feature of Audacity?**

(A) Creating 3D models

(B) Removing unwanted noise from recordings

(C) Designing websites

(D) Playing computer games

Answer: (B) Removing unwanted noise from recordings

**14. The default project file for OpenShot is saved with which extension?**

(A) .mp4

(B) .avi

(C) .mov

(D) .osp

Answer: (D) .osp

**15. What does 'Import' mean in the context of a video editor?**

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- (A) To save the final video
- (B) To bring media files (images, clips) into the project
- (C) To upload the video to the internet
- (D) To delete a clip from the timeline

Answer: (B) To bring media files (images, clips) into the project

## Chapter 5: Presenting Ideas



### **1. Core Concepts**

The hero of this chapter is **Presentation Software**, like MS PowerPoint or the free LibreOffice Impress. This software helps you organize and present your ideas, text, images, audio, and video in beautiful slides.

- **Presentation (प्रस्तुति)**: The act of presenting your ideas to an audience using a mixture of text, images, audio, video, and animation (multimedia).
- **Slide (स्लाइड)**: A single page of a presentation, just like a single page in your book.
- **Layout (लेआउट)**: This is the design of a slide, which determines where the Title, text, and photos will be placed. Examples include 'Title and Content', 'Two Column', etc.
- **Placeholder (प्लेसहोल्डर)**: The dotted boxes on a slide that say "Click to add Title" or "Click to add Text" are called placeholders. This is where we insert our content.

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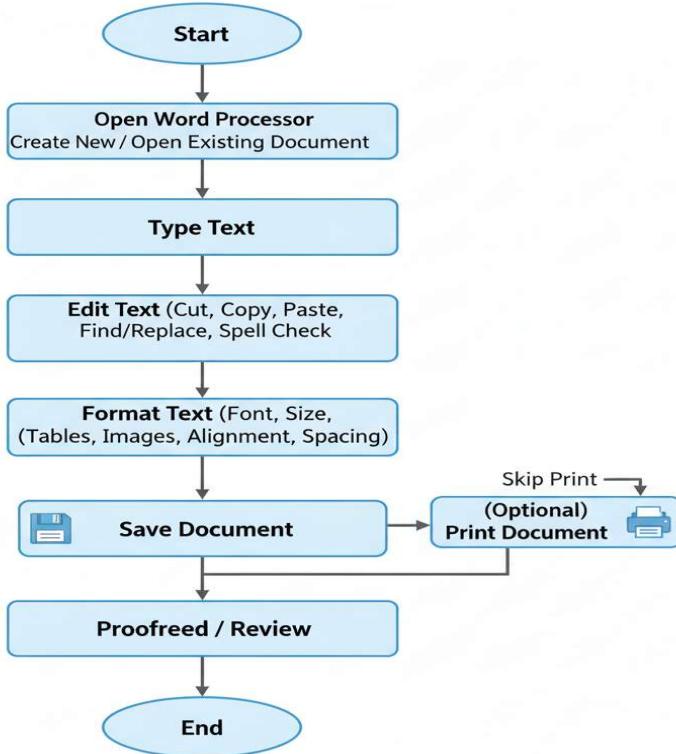
- Animation & Transition (एनिमेशन और ट्रांज़िशन):
  - **Animation:** Applying special effects to objects *within* a slide (like text or images), such as making them fly in or fade in.
  - **Transition:** The style of changing from one slide to the next, like one slide dissolving to reveal the next one.
  - **PYQ Spotlight:** Listen up! A question in both the EMRS TGT & PGT 2023 exams asked, "Which software would you use to create an animated multimedia presentation?". The answer was **Microsoft PowerPoint**. This is a viral question for the exam! It shows how important it is to know the purpose of presentation software.
- Slide Show (स्लाइड शो): Displaying your created presentation in full-screen mode to the audience.
  - **Shortcut:** F5
- Slide Sorter View (स्लाइड सॉर्टर व्य): A screen where you can see all your slides at once as small thumbnails, allowing you to easily change their order (sequence).
- Export to PDF (पीडीएफ में एक्सपोर्ट करें): Saving your presentation in .pdf format so that it cannot be easily edited and can be shared conveniently.

### 2. Memory Trick

Do you forget the 5 steps to create a 'Superhit' Presentation? Just remember this.

- **L - Layout** (First, choose the layout for your slide)
- **A - Add Content** (Then, insert your text, images, and video)
- **D - Design** (Make it beautiful with backgrounds and themes)
- **D - Drama** (Add some 'spice' with Animation and Transition)
- **S - Slide Show** (And press F5 to become the hero!)

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## 3. Most Likely to Ask

Take note of your Guru's words! These questions from this chapter have a high chance of appearing in the exam:

1. **Software Purpose:** They will definitely ask which software is best for creating a 'Presentation'. (Answer: PowerPoint / Impress). This has already been asked in a PYQ!
2. **Basic Terminology:** What is the meaning of 'Slide', 'Layout', and 'Placeholder'?
3. **Animation vs. Transition:** The difference between these two. You must know this by heart! Animation is for content *inside* a slide; Transition is *between* two slides.
4. **Shortcut Key:** The shortcut key to start a slide show (**F5**).
5. **Views:** What is the use of 'Slide Sorter View'? (Answer: To re-arrange slides).
6. **Exporting:** "Why do we export a presentation to PDF?" (Answer: To make it non-editable and easy to share).

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### **4. Chapter Summary (In a Nutshell)**

1. Software like PowerPoint/Impress is used to present ideas in the form of slides.
  2. The **Layout** decides the structure of a slide, and we add content into **placeholders**.
  3. **Animation** (effects on content) and **Transition** (effects between slides) make a presentation interesting.
  4. Pressing **F5** starts the Slide Show. Exporting to **PDF** is the best way to share the final presentation.
- 

### **5. MCQ Question Bank (Time for Real Preparation!)**

1. Which software is specifically designed for creating presentations?

- (A) MS Word
- (B) MS Excel
- (C) MS PowerPoint
- (D) GIMP

Answer: (C) MS PowerPoint

2. A single page in a presentation is called a:

- (A) Document
- (B) Sheet
- (C) Slide
- (D) Canvas

Answer: (C) Slide

3. The 'Click to add Title' box on a new slide is an example of a:

- (A) Layout
- (B) Theme
- (C) Placeholder
- (D) Transition

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Answer: (C) Placeholder

**4. The special effect used to introduce objects on a slide is called:**

- (A) Transition
- (B) Animation
- (C) Layout
- (D) Theme

Answer: (B) Animation

**5. The effect that occurs when you move from one slide to the next is a:**

- (A) Transition
- (B) Animation
- (C) Layout
- (D) Design

Answer: (A) Transition

**6. Which key is commonly used to start a slide show from the beginning?**

- (A) F1
- (B) F5
- (C) Esc
- (D) Enter

Answer: (B) F5

**7. Which view allows you to see all your slides at once and re-arrange them?**

- (A) Normal View
- (B) Outline View
- (C) Slide Sorter View
- (D) Notes Page View

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Answer: (C) Slide Sorter View

**8. Why would you export a presentation to PDF format?**

- (A) To add more animations
- (B) To make it easily editable by anyone
- (C) To make it a non-editable, universally viewable file for sharing
- (D) To increase the file size

Answer: (C) To make it a non-editable, universally viewable file for sharing

**9. LibreOffice Impress is an example of what type of software?**

- (A) Paid Software
- (B) Free and Open Source Software
- (C) System Software
- (D) Proprietary Software

Answer: (B) Free and Open Source Software

**10. What can you insert into a presentation slide?**

- (A) Text and Images
- (B) Audio and Video
- (C) Charts and Tables
- (D) All of the above

Answer: (D) All of the above

**11. The first slide in a presentation is usually the:**

- (A) Content Slide
- (B) Title Slide
- (C) Summary Slide
- (D) Last Slide

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Answer: (B) Title Slide

**12. To make text 'fly in' from the side, you would apply a(n):**

- (A) Slide Transition
- (B) Custom Animation
- (C) Slide Layout
- (D) Background Style

Answer: (B) Custom Animation

**13. The main workspace where you design your individual slides is called the:**

- (A) Slide Pane
- (B) Notes Pane
- (C) Task Pane
- (D) Main editing area

Answer: (D) Main editing area

**14. What is a 'Theme' in presentation software?**

- (A) The topic of the presentation
- (B) A pre-designed set of colors, fonts, and layouts
- (C) A type of animation
- (D) The file format

Answer: (B) A pre-designed set of colors, fonts, and layouts

**15. To end a slide show, you can usually press the:**

- (A) F5 key
- (B) Esc key
- (C) Home key
- (D) Spacebar

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Answer: (B) Esc key

## **Chapter 6: Getting Connected: Internet**

### **1. Relatable Introduction**

Hey friends! You probably use Google 100 times a day, but have you ever wondered what Google actually is? Or what the deal is with the 's' in https versus http? Don't worry! In this chapter, we will uncover all the secrets of the Internet. After reading this, you will become a 'real' Internet expert. Let's click the CONNECT button! 

---

### **2. Core Concepts**

The Internet is a vast topic, but let's make the exam-important concepts crystal clear.

- **World Wide Web (WWW)**: Think of the WWW as a giant 'library' containing all the information (documents, images, videos). The **Internet** is the network of 'roads' that connects you to this library. They are not the same; the Internet is the infrastructure, and the WWW is a service that runs on it.
- **Web Browser (वेब ब्राउज़र)**: This is the 'vehicle' you use to travel the roads of the Internet and explore the WWW library. You cannot access the web without it.
  - **Examples:** Google Chrome, Mozilla Firefox, Microsoft Edge, Opera.
  - **PYQ Spotlight:** The EMRS TGT 2023 exam directly asked, "Which of the following is NOT a web browser?" and one option was **Android**. Android is an Operating System, not a browser. This is a viral question! The EMRS TGT Librarian 2023 exam also asked,

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"Which of the following is a web browser?" (Answer: Mozilla Firefox).

- **Website (वेबसाइट) & Webpage (वेबपेज)**: A **Website** is like a 'book', and a **Webpage** is a single 'page' in that book. The first page that opens when you visit a website is called the **Home Page**.
- **URL (Uniform Resource Locator)**: This is the unique 'address' of any webpage, just like the address of your home.
  - **Example:** <https://www.ncert.nic.in>
  - **💡 PYQ Spotlight:** Full form alert! The full form of **URL** was asked in both the EMRS TGT Librarian 2023 and PGT History 2023 exams. You must memorize this!
- **HTTP & HTTPS:**
  - **HTTP (Hypertext Transfer Protocol)**: This is the set of rules that a web browser and a server use to communicate with each other.
  - **HTTPS (Hypertext Transfer Protocol Secure)**: This is the secure version of HTTP. Whenever you see `https` in a URL, you know the website is secure and the data is encrypted. Banking and online shopping websites always use HTTPS.
  - **💡 PYQ Spotlight:** Another viral question from EMRS TGT 2023! The full form of **HTTPS** was asked. Do not forget that the 'S' stands for **Secure**.
- **Search Engine (सर्च इंजन)**: This is the 'Librarian' of the Internet. You give it any topic (**keyword**), and it finds all the related webpages for you.
  - **Examples:** Google, Bing, Yahoo.
- **Email (ई-मेल)**: This stands for **Electronic Mail**. It's a digital 'letter'. You need an email ID to send and receive emails.

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- **Components:** **To** (Recipient's address), **Subject** (Topic of the email), **Cc** (Carbon Copy - everyone can see who received a copy), and **Bcc** (Blind Carbon Copy - no one else knows that this person also received a copy).
  - **Uploading vs. Downloading (अपलोडिंग बनाम डाउनलोडिंग):**
    - **Uploading:** Sending something from your computer **to** the Internet (e.g., uploading a photo to social media).
    - **Downloading:** Saving something **from** the Internet to your computer (e.g., downloading a song).
- 

### **3. Mnemonic**

Confused about the parts of an Email ID? Just remember this simple formula:

**Your Name @ Address!**

shubham@gmail.com

- **shubham:** This is the **Username** (Your Name).
- **@:** This symbol means 'at'.
- **gmail.com:** This is the **Domain Name** of the Email Service Provider (Your Address).

So, the address means "shubham at gmail.com". Simple, right?

## **How a Search Engine Works**



### **4. Most Likely to Ask**

Friends, these topics from this chapter are sure to be hot in the exam:

1. **Full Forms (Definitely Coming!):** URL, HTTP, HTTPS, WWW. Memorize these thoroughly.
2. **Browser vs. Search Engine:** You'll be given a list and asked, "Which is a web browser?" or "Which is a search engine?". Remember, Google is a search engine; Chrome is a browser. Don't get confused.
3. **The 'S' in HTTPS:** This is an examiner's favorite question. 'S' stands for Secure.
4. **Email Components:** The difference between **Cc** and **Bcc**. Remember that the Bcc recipient is 'hidden'!
5. **Identify the Tool:** "The software used to access the WWW is called...?"  
(Answer: **Web Browser**).

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6. **Cloud Storage:** The EMRS PGT Physics 2023 exam asked, "Which is Microsoft's cloud storage service?" (Answer: **OneDrive**). Therefore, remember examples like **Google Drive**, **OneDrive**, and **Dropbox**.
- 

### **5. Chapter Summary (In a Nutshell)**

1. We use a **Web Browser** (like Chrome) to access the **WWW** (the Internet's library).
  2. Every webpage has a unique address called a **URL**.
  3. Websites with **HTTPS** are safe and secure.
  4. **Email** is a digital letter where **Cc** is visible to all recipients, but **Bcc** is hidden.
- 

### **5. MCQ Question Bank (Time for Real Preparation!)**

1. Which of the following is an example of a Web Browser?

- (A) Google
- (B) Yahoo
- (C) Mozilla Firefox
- (D) Bing

Answer: (C) Mozilla Firefox

2. What does 'S' in HTTPS stand for?

- (A) Simple
- (B) Server
- (C) Secure
- (D) Service

Answer: (C) Secure

3. The unique address of a webpage is called:

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(A) HTTP

(B) WWW

(C) URL

(D) IP

Answer: (C) URL

**4. Which of the following is a Search Engine?**

(A) Google Chrome

(B) Microsoft Edge

(C) Google

(D) Opera

Answer: (C) Google

**5. The first page that opens when you visit a website is called the:**

(A) Main Page

(B) Start Page

(C) Home Page

(D) Index Page

Answer: (C) Home Page

**6. Sending a photo from your phone to Instagram is an example of:**

(A) Downloading

(B) Browsing

(C) Uploading

(D) Searching

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Answer: (C) Uploading

**7. In an email, if you want to send a copy to someone without others knowing, you should use:**

- (A) To
- (B) Cc
- (C) Bcc
- (D) Subject

Answer: (C) Bcc

**8. Which of the following is NOT an email service provider?**

- (A) Gmail
- (B) Yahoo Mail
- (C) Outlook
- (D) Google Chrome

Answer: (D) Google Chrome

**9. The full form of URL is:**

- (A) Universal Resource Link
- (B) Uniform Resource Locator
- (C) Uniform Resource Link
- (D) Universal Resource Locator

Answer: (B) Uniform Resource Locator

**10. Saving a webpage's address in your browser for future access is called:**

- (A) Downloading
- (B) Uploading

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(C) Bookmarking

(D) Caching

Answer: (C) Bookmarking

**11.Which Microsoft-owned cloud storage service was asked in the EMRS PGT exam?**

(A) Google Drive

(B) iCloud

(C) Dropbox

(D) OneDrive

Answer: (D) OneDrive

**12.The term WWW stands for:**

(A) World Wide Web

(B) Wide World Web

(C) Web World Wide

(D) World Web Wide

Answer: (A) World Wide Web

**13.A hyperlink is typically:**

(A) A link to another webpage or resource

(B) A type of web browser

(C) A hardware device

(D) A computer virus

Answer: (A) A link to another webpage or resource

**14.What do you type into a search engine to find information?**

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- (A) A URL
- (B) A Keyword
- (C) An email address
- (D) A password

Answer: (B) A Keyword

**15. Saving a song from the internet to your computer is an example of:**

- (A) Uploading
- (B) Browsing
- (C) Attaching
- (D) Downloading

Answer: (D) Downloading

## **Chapter 7: Safety and Security in the Cyber World**

### **1. Relatable Introduction**

Hey friends! Have you ever received a message like, "Congratulations! You have won 1 Crore!"? Or "FREE! FREE! FREE! Download this game for free!"? If yes, then be careful! This is a trap set by the 'villains' of the internet. In this chapter, we will learn how to stay safe from these thieves and crooks in the online world. Let's begin our cyber-security training! 🏗️

---

### **2. Core Concepts**

To stay safe on the Internet, it is very important to recognize these villains.

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- **Spam (स्पैम):** These are unwanted emails or messages that are sent in bulk. Their purpose is to get personal information from you or to sell something. You should always ignore or delete them.
- **Phishing (फिशिंग):** This is the 'digital thief'! These people ask for your sensitive information like username, password, or credit card details by creating a fake website that looks exactly like the original one.
  - **How to identify:** The URL will have `http` instead of `https`. Or there will be a spelling mistake in the URL (e.g., `gmaail.com` instead of `gmail.com`).
- **Malware (मैलवेयर):** This is a 'rogue' software. Its full name is **Malicious Software**. Many types of villains fall under this category.
- **Virus (वायरस):** This is a type of malware that enters your computer and corrupts or deletes files, and it slows down the computer.
  - **How does it spread?:** Through pen drives, unknown email attachments, or by downloading free software.
  - **💡 PYQ Spotlight:** Friends, in EMRS TGT 2023 it was asked, "Which of the following has the least threat for virus infection?". The correct answer was **Online Printer**. Because a virus spreads through digital files, not printed paper. See, if the concept is clear, the answer is clear!
- **Anti-virus (एंटी-वायरस):** This is the 'bodyguard' of your computer. It finds the virus and deletes it.
  - **Examples:** McAfee, Norton, Kaspersky.
  - **💡 PYQ Spotlight:** This is a 'viral question' for the exam! In EMRS PGT (Biology & Physics) 2023, it was asked, "McAfee Plus is an example of what?". The correct answer is **Anti-virus**. You must know this by heart!
- **Cybercrime (साइबर अपराध):** Any crime committed using the Internet.
  - **💡 PYQ Spotlight:** In EMRS PGT (Biology) 2023, it was asked, "Under the IT Act 2000, which of the following is NOT a cybercrime?". The answer was **Stealing a monitor from a store**, because this is a physical theft, not a cyber theft.

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- **Identity Theft (पहचान की चोरी):** When someone steals your personal information (name, photo, etc.) and takes on your identity online.
  - **Cyberbullying (साइबर धमकी):** Harassing, threatening, or spreading false things about someone on the Internet.
- 

### 3. Guru's Mnemonic (Memory Trick)

Do you forget the formula for creating a Strong Password? Just remember this powerful line: "**My Password Should Stay Hidden!**"

- **M - Mix** (Mix uppercase [A,B] and lowercase [a,b] letters)
  - **P - Punctuation/Symbols** (Use special characters like @, #, \$)
  - **S - Size** (Should be at least 8 characters long)
  - **S - Sequences are bad** (Don't use your name, birthdate, or sequences like 123456)
  - **H - Have** a new one for each account (Keep different passwords for every important account)
- 

### 4. Guru's Gyan (Most Likely to Ask)

1. **Identify the Villain (Definitions):** The definitions of Phishing, Spam, Malware, and Virus will surely be asked. They might ask, "An attempt to get sensitive information by posing as a trustworthy source is called...?" (Answer: Phishing).
2. **Name the Bodyguard (Anti-virus):** They will give a name like McAfee, Norton, or Kaspersky and ask what it is. This has already been in a PYQ!
3. **What is Cybercrime?:** They will give a situation and ask if it is a cybercrime under the IT Act or not.
4. **Rules for a Strong Password:** What are the characteristics of a strong password.
5. **The 'S' in HTTPS:** I am reminding you again, the 'S' in https means **Secure**. This is the base of cyber-security.

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### **5. Chapter Summary (In a Nutshell)**

1. Do not click on unknown emails/links; they could be Phishing or Spam.
  2. Keep a good Anti-virus (bodyguard) installed on your computer.
  3. Create a Strong Password and do not share it with anyone.
  4. If someone harasses you online (cyberbully), do not respond, Block them, take a Screenshot, and inform your elders (Parents/Teachers).
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### **6. PYQ Question Bank (Time for Real Preparation!)**

#### **1. (EMRS PGT Biology/Physics, 2023)**

**McAfee Plus is an example of:**

- (A) Application software
- (B) Open source software
- (C) Programming language
- (D) Anti-virus

**Answer: (D) Anti-virus**

#### **2. (EMRS PGT Biology, 2023)**

**Which of the following does not come under cyber-crime under IT Act 2000?**

- (A) Distributing child pornography over internet
- (B) Misusing personal information over internet
- (C) Using fake email messages to get personal information

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(D) Stealing monitor from a store

Answer: (D) Stealing monitor from a store

### **3. (EMRS TGT, 2023)**

**Which of the following is the least threat for virus infection?**

(A) Downloaded free software

(B) Downloaded email attachment

(C) Online printer

(D) Portable storage devices

Answer: (C) Online printer

### **4. (EMRS TGT Librarian, 2023)**

**Which of the following is considered a good cyber-safe practice?**

(A) Using 2-factor authentication

(B) Adding comments on every post regularly

(C) Uploading every trip's photos on social media regularly

(D) Keeping same password for all accounts for ease of use

Answer: (A) Using 2-factor authentication

### **5. (KVS PGT, 2018)**

A \_\_\_\_\_ is a software program that attaches itself to other programs and alters their behaviour.

(A) Virus

(B) Anti-virus

(C) Web browser

(D) Operating system

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Answer: (A) Virus

### **6. (NVS PGT, 2019)**

**The act of fraudulently obtaining private information such as passwords or credit card details is known as:**

- (A) Spamming
- (B) Hacking
- (C) Phishing
- (D) Bugging

Answer: (C) Phishing

### **7. (DSSSB TGT, 2021)**

**A firewall is used in a computer for:**

- (A) Security
- (B) Data transmission
- (C) Authentication
- (D) Monitoring

Answer: (A) Security

### **8. (KVS TGT, 2017)**

**The term 'malware' is a short form for:**

- (A) Malicious freeware
- (B) Malfunctioning software
- (C) Malicious software
- (D) Malevolent hardware

Answer: (C) Malicious software

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### **9. (NVS TGT, 2019)**

**Which of the following is a recommended practice for creating a strong password?**

- (A) Using a common dictionary word
- (B) Using personal details like your birthday
- (C) Using a combination of letters, numbers, and symbols
- (D) Writing it down and keeping it near the computer

**Answer: (C) Using a combination of letters, numbers, and symbols**

### **10.(CTET Paper 1, 2019)**

**Sending threatening messages on the internet is referred to as:**

- (A) Cybercrime
- (B) Cyberbullying
- (C) Phishing
- (D) Spam

**Answer: (B) Cyberbullying**

### **11.(KVS PGT, 2018)**

**A type of malware that is often disguised as legitimate software is called a:**

- (A) Worm
- (B) Trojan Horse
- (C) Spyware
- (D) Adware

**Answer: (B) Trojan Horse**

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### 12.(DSSSB PGT, 2021)

To protect a computer from virus, you should install \_\_\_\_\_ on your computer.

- (A) Firewall
- (B) Antivirus
- (C) Disk cleanup
- (D) Backup wizard

Answer: (B) Antivirus

### 13.(NVS PGT, 2019)

The 'S' in HTTPS indicates that the connection is:

- (A) Speedy
- (B) Special
- (C) Secure
- (D) Static

Answer: (C) Secure

### 14.(KVS TGT, 2018)

The practice of sending unwanted bulk messages, typically for commercial purposes, is known as:

- (A) Phishing
- (B) Spamming
- (C) Hacking
- (D) Cracking

Answer: (B) Spamming

## Chapter 8: Fun with Logic

### 1. Relatable Introduction

Hey friends! While making tea, have you ever boiled the milk first and then added water later? Everything gets messed up, right? That's exactly what 'Logic' is! A computer is also like a child; you have to explain every task to it step-by-step. In this chapter, we will learn to give instructions to a computer, that too with a game-like software, Scratch. Let's make friends with the 'C' of coding! 😊

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### 2. Core Concepts

The hero of this chapter is Scratch. This is a free visual programming language where we don't 'write' code, but rather 'join' blocks. It's the best for teaching programming to young children!

- **Algorithm (एल्गोरिदम):** A step-by-step process to perform any task. For example, a tea recipe is an algorithm. Computer programming runs entirely on algorithms.
- **Scratch (स्क्रैच):** A free software where we can create animations and games by dragging and dropping blocks.
- **Sprite (स्प्राइट):** Any character or object in Scratch is called a Sprite. The default sprite is a cat! 😺
- **Stage (स्टेज):** This is the background area where all the sprites perform their actions. It is like an x-y coordinate plane.
- **Script (स्क्रिप्ट):** The complete set of instructions given to a sprite. It tells the sprite when, what, and how to do something.
- **Instruction Blocks (इंस्ट्रक्शन ब्लॉक्स):** These are blocks of pre-written commands (like 'move 10 steps', 'turn 15 degrees') which we join together to create a script.

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- Costumes (कॉस्ट्यूम्स): Different looks or poses of a single sprite. For example, to show a walking character, we use its 2-3 costumes (leg forward, leg back).
  - Backdrop (बैकड्रॉप): The background image of the Stage, such as a jungle scene or an underwater world.
- 

### **3. Guru's Mnemonic (Memory Trick)**

**How to remember the 3 S-heroes of Scratch? Just remember this line: "The Script makes the Sprite dance on the Stage!"**

- Sprite: The Character (The Hero)
- Stage: The Background (The Set)
- Script: The Instructions (The Director's commands)

With this, you will never forget what is what! Simple, isn't it?

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### **4. Guru's Gyan (Most Likely to Ask)**

**Friends, take note of your Guru's words! There are no direct PYQs from this chapter, but it builds 'Logical Thinking' which will be useful in the Reasoning section. If a question does come in ICT, it will be one of these:**

1. **What is an Algorithm?:** The definition of an algorithm is a very hot topic.
2. **What is Scratch?:** They will ask, "Scratch is an example of...?" (Answer: Visual Programming Language).
3. **Basic Terminology:** What is the meaning of 'Sprite', 'Stage', and 'Script'. You must know this by heart!
4. **Sequencing:** "Why is the sequence of instructions important in programming?" (Answer: To get the correct desired output).

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**5. Block-based Programming:** Remember this term. Scratch is a block-based programming language.

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### **5. Chapter Summary (In a Nutshell)**

- 1. An Algorithm is a step-by-step, logical process for doing any work.**
  - 2. Scratch is a free, visual, and block-based programming language used to create games and animations.**
  - 3. In Scratch, the Sprite (character) works on the Stage (background) according to the Script (instructions).**
  - 4. For any task to be done correctly, it is very important for the instructions to be in a logical sequence.**
- 

### **6. MCQ Question Bank (Time for Real Preparation!)**

- 1. A step-by-step procedure to solve a problem is called:**  
**(A) A program**  
**(B) A software**  
**(C) An Algorithm**  
**(D) A flowchart**

**Answer: (C) An Algorithm**

- 2. In Scratch, what is a character or object called?**  
**(A) Stage**  
**(B) Script**  
**(C) Sprite**  
**(D) Backdrop**

**Answer: (C) Sprite**

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3. Scratch is an example of what type of programming language?

- (A) Text-based programming language
- (B) Machine language
- (C) Visual, block-based programming language
- (D) Assembly language

Answer: (C) Visual, block-based programming language

4. The background area where the sprites perform actions is called the:

- (A) Script Area
- (B) Sprite Area
- (C) Stage
- (D) Costume Tab

Answer: (C) Stage

5. A set of instructions given to a sprite is known as a:

- (A) Script
- (B) Backdrop
- (C) Costume
- (D) Algorithm

Answer: (A) Script

6. What is the main purpose of using "costumes" for a sprite?

- (A) To change the background
- (B) To create the appearance of movement or change its look
- (C) To add sound
- (D) To delete the sprite

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Answer: (B) To create the appearance of movement or change its look

7. In Scratch, the "when green flag clicked" block is found under which category?

(A) Motion

(B) Looks

(C) Sound

(D) Events

Answer: (D) Events

8. To make a sprite draw a line as it moves, which category of blocks would you use?

(A) Motion

(B) Pen

(C) Looks

(D) Sound

Answer: (B) Pen

9. The Stage in Scratch is based on which mathematical concept for positioning?

(A) Geometry

(B) X-Y Coordinate System

(C) Trigonometry

(D) Algebra

Answer: (B) X-Y Coordinate System

10. Why is the logical sequence of instructions important?

(A) To make the program run faster

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- (B) To get the desired and correct output
- (C) To use less memory
- (D) To make the code look beautiful

Answer: (B) To get the desired and correct output

11. The default sprite when you open a new Scratch project is a:

- (A) Dog
- (B) Ball
- (C) Cat
- (D) Fish

Answer: (C) Cat

12. The "glide" block in Scratch is part of which category?

- (A) Motion
- (B) Looks
- (C) Control
- (D) Pen

Answer: (A) Motion

13. To change the background of the Stage, you would add a new:

- (A) Sprite
- (B) Costume
- (C) Backdrop
- (D) Script

Answer: (C) Backdrop

14. What is the first step in solving any problem logically?

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- (A) Writing the code
- (B) Analyzing the instructions
- (C) Clearly identifying the desired output
- (D) Verifying the result

Answer: (C) Clearly identifying the desired output

15. Scratch was developed by:

- (A) Google
- (B) Microsoft
- (C) Apple
- (D) MIT (Massachusetts Institute of Technology)

Answer: (D) MIT (Massachusetts Institute of Technology)