



SUBJECT CODE: 402

INFORMATION TECHNOLOGY

CBSE Class 9 Complete Master Guide

Comprehensive Chapter-Wise Notes, Practical Lab Manual, Viva Voce Question Bank, Competency-Based Scenarios, 50-MCQ Practice Suite, Model Test Papers, and Technical Glossary.

Aligned strictly with the latest CBSE Curriculum & Examination Pattern



Passionate About Tech? Let's Build Something Great!

Take your computer skills to the next level at Webdox Computer Institute. Enjoy fun, project-based classes that make learning software, tools, and digital skills effortless.

**Ready to Level Up?
Scan the QR code to get started**



Board: CBSE Class: 9 Subject: IT (402)

TABLE OF CONTENTS

Introductory Material

1. Introduction & CBSE Curriculum Architecture	Page 3
--	--------

Part A: Employability Skills (10 Marks)

Unit 1: Communication Skills-I	Page 4
Unit 2: Self-Management Skills-I	Page 5
Unit 3: Information & Communication Technology (ICT) Skills-I	Page 6
Unit 4: Entrepreneurial Skills-I	Page 7
Unit 5: Green Skills-I	Page 8

Part B: Subject Specific Skills (40 Marks)

Unit 1: Introduction to IT-ITeS Industry	Page 9
Unit 2: Data Entry & Keyboarding Skills	Page 10
Unit 3: Digital Documentation (Part 1 - Word Processing & Formatting)	Page 11
Unit 3: Digital Documentation (Part 2 - Advanced Tables & Mail Merge)	Page 12
Unit 4: Electronic Spreadsheet (Part 1 - Grid Structure & Cell Referencing)	Page 13
Unit 4: Electronic Spreadsheet (Part 2 - Formulas, Functions & Charts)	Page 14
Unit 5: Digital Presentation (Part 1 - Slide Creation, Layouts & Views)	Page 15
Unit 5: Digital Presentation (Part 2 - Transitions, Animations & Delivery)	Page 16

Practical Work, Question Banks & Examinations

Practical Lab Work Manual (Experiments 1 & 2)	Page 17
Practical Lab Work Manual (Experiments 3 & 4)	Page 18
Comprehensive Viva Voce Master Question Bank	Page 19
Theory Question Bank - Part A (Employability Skills)	Page 20
Theory Question Bank - Part B (Subject Specific Skills)	Page 21
Competency-Based & Case Study Scenario Problems	Page 22
50-MCQ Master Practice Suite (Part 1: Questions 1 to 25)	Page 23
50-MCQ Master Practice Suite (Part 2: Questions 26 to 50)	Page 24
CBSE Model Theory Question Paper 1 (30 Marks Practice Test)	Page 25
CBSE Model Question Paper 1 - Solutions & Marking Scheme	Page 26
CBSE Model Theory Question Paper 2 (30 Marks Practice Test)	Page 27
CBSE Model Question Paper 2 - Solutions & Marking Scheme	Page 28
A-Z Technical Terms Glossary & Dictionary	Page 29
Quick Revision Cheat Sheet & Exam Strategy	Page 30

1. CBSE IT CODE 402 CURRICULUM ARCHITECTURE

The CBSE Class 9 Information Technology (Subject Code 402) scheme is designed to evaluate both theoretical understanding and practical competence. The total evaluation is out of 100 marks, split equally between Theory (50 Marks) and Practical Examination (50 Marks).

Assessment Component	Sub-Section / Unit Category	Marks Allocated
Theory Paper (50 Marks 2 Hours)	Part A: Employability Skills (5 Units)	10 Marks
	Part B: Subject Specific Skills (5 Units)	40 Marks
Practical Evaluation (50 Marks)	Practical Examination (Hands-on Lab Test)	15 Marks
	Written Practical Test / Lab Assignment File	10 Marks
	Viva Voce (Oral Exam)	10 Marks
	Project Work / Field Visit Portfolio	15 Marks
TOTAL MARKS		100 Marks

THEORY EXAM BLUEPRINT & QUESTION PAPER STRUCTURE

The annual board theory question paper contains two distinct sections designed to test objective recall, short conceptual clarity, and long application abilities:

Section A: Objective Type (24 Marks)

Contains 30 objective-type questions (MCQs, Fill in the blanks, One-word answers, True/False). Students must answer 24 questions. Tests speed and fundamental concepts across all units.

Section B: Subjective Type (26 Marks)

Contains short-answer (2 marks each) and long-answer/competency-based questions (4 marks each). Evaluates step-by-step software operation procedures and real-life scenario solutions.

Strategy for Scoring 100% in IT 402

- **Focus on Practical Steps:** Board exams frequently ask for precise navigation paths (e.g., *Tools > Mail Merge Wizard* or *Format > Character*).
- **Master Keyboard Shortcuts:** Memorize essential shortcuts for speed and accuracy in objective sections.
- **Understand Formulas & Syntax:** In spreadsheets, always ensure formulas begin with an = sign.

PART A: EMPLOYABILITY SKILLS (10 MARKS)

UNIT 1: Communication Skills-I

Verbal, Non-verbal, Visual Communication & Basic Writing Skills

Communication is the act of sharing, expressing, or exchanging information, ideas, feelings, and thoughts between two or more individuals. The word comes from the Latin word '*communicare*', which means 'to share'.

METHODS OF COMMUNICATION

- **Verbal Communication:** Uses spoken or written words. Includes Oral (face-to-face, phone calls) and Written (emails, letters, reports).
- **Non-Verbal Communication:** Expression without words. Includes body language, gestures, eye contact, posture, facial expressions, and touch (haptics).
- **Visual Communication:** Conveying messages through symbols, signs, images, charts, and logos (e.g., traffic lights, danger signs).

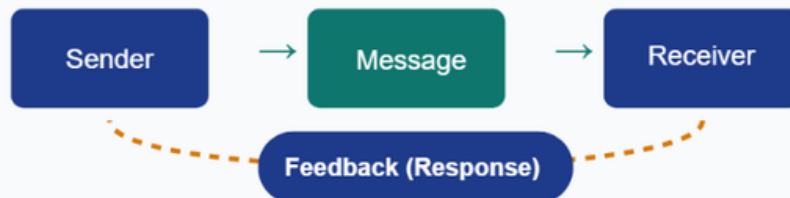


Figure 4.1: The Communication Cycle

WRITING SKILLS BASICS: PARTS OF SPEECH

Part of Speech	Definition / Role	Example Words
Noun	Name of a person, place, thing, or idea.	Computer, Delhi, Priya, Keyboard
Pronoun	Replaces a noun to avoid repetition.	He, She, It, They, We
Verb	Shows an action, state, or occurrence.	Type, Click, Save, Run, Study
Adjective	Describes or modifies a noun.	Fast computer, Bright screen
Adverb	Modifies a verb, adjective, or another adverb.	Types <i>quickly</i> , works <i>efficiently</i>

UNIT 2: Self-Management Skills-I

Self-Confidence, Positive Attitude, Personal Hygiene & Grooming

Self-management refers to the ability to control and regulate one's emotions, thoughts, and behaviors effectively in different situations. It involves setting goals, staying motivated, managing time, and taking responsibility for personal development.

KEY ELEMENTS OF SELF-MANAGEMENT

1. Self-Awareness

Knowing your own strengths, weaknesses, values, emotions, and beliefs. Helps in choosing the right academic and career paths.

2. Self-Control / Discipline

The ability to direct your behavior and resist temptations or distractions to achieve long-term goals.

3. Self-Confidence

Trusting in your own abilities, judgment, and qualities. Confident individuals overcome obstacles and learn from failure.

4. Positive Attitude

Focusing on solutions rather than problems, maintaining optimism, and viewing challenges as learning opportunities.

FACTORS INFLUENCING SELF-CONFIDENCE

- **Social Environment:** Support from family, teachers, and peers builds positive self-esteem.
- **Cultural Background:** Cultural exposure shapes personal values and confidence.
- **Physical Health & Grooming:** Feeling clean and presenting oneself neatly boosts inner confidence.

PERSONAL HYGIENE & PROFESSIONAL GROOMING

Personal hygiene keeps your body clean and healthy, while grooming refers to the art of maintaining a neat personal appearance.

Hygiene Aspect	Best Practices for Students
Care & Cleanliness	Wash hands regularly before meals and after computer lab sessions; bathe daily.
Grooming & Attire	Wear clean, well-ironed school uniforms; keep hair combed and nails neatly trimmed.
Posture & Presence	Sit upright at computer desks to prevent strain and project confidence.

UNIT 3: Information & Communication Technology Skills-I

Computer Architecture, Operating Systems & File Management

ICT (Information and Communication Technology) encompasses all digital technologies that handle information, including computer hardware, software, telecommunications, and the internet.

HARDWARE VS SOFTWARE

A computer system consists of two major components working together:

- **Hardware:** Physical, tangible parts of a computer (e.g., Keyboard, Monitor, CPU, Hard Drive).
- **Software:** Set of instructions/programs that tell the hardware what to do (e.g., Windows 11, Linux, LibreOffice, Chrome).

COMPUTER HARDWARE CLASSIFICATION

Category	Function	Examples
Input Devices	Feeds data/commands into the system.	Keyboard, Mouse, Scanner, Barcode Reader, Mic
Processing Unit	Executes commands and performs calculations (ALU + CU).	Central Processing Unit (CPU)
Output Devices	Displays processed results to the user.	Monitor, Printer, Speaker, Projector
Storage Devices	Stores data permanently or temporarily.	HDD, SSD, RAM (Temporary), ROM, USB Flash Drive

OPERATING SYSTEM & FILE DIRECTORY STRUCTURE

An **Operating System (OS)** is system software that acts as an interface between the user and computer hardware (e.g., Windows, Linux, macOS).

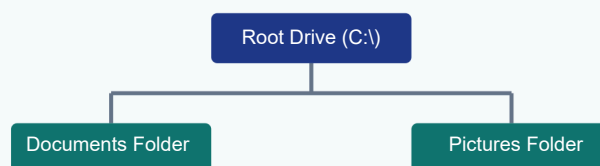


Figure 6.1: Hierarchical File System Structure

UNIT 4: Entrepreneurial Skills-I

Understanding Business Types, Entrepreneurship & Innovation

Entrepreneurship is the process of setting up a business enterprise, taking financial risks, and innovating to create value, products, or services for society while aiming to earn a profit.

WAGE EMPLOYMENT VS ENTREPRENEURSHIP

Parameter	Wage Employment (Job)	Entrepreneurship (Business)
Role	Works for an organization/boss.	Is their own boss (Employer).
Income	Fixed monthly salary/wage.	Variable profits based on business performance.
Risk	Low risk (Job security).	High financial and business risk.
Innovation	Follows assigned instructions.	Innovates, solves problems, creates new markets.

CHARACTERISTICS OF A SUCCESSFUL ENTREPRENEUR

1. Perseverance & Hard Work

Unwavering dedication to keep trying even after encountering initial business failures.

2. Calculated Risk Taking

Willingness to take analyzed risks rather than reckless gambles to grow the venture.

3. Creativity & Innovation

Constantly coming up with unique product ideas or better ways to solve everyday customer problems.

4. Leadership & Teamwork

Ability to guide, motivate, and manage employees towards a shared vision.

TYPES OF BUSINESS ACTIVITIES

- **Manufacturing Business:** Converts raw materials into finished goods (e.g., Furniture factory, Textile mill).
- **Trading Business:** Buys finished goods from manufacturers and sells them to consumers (e.g., Grocery retail shop).
- **Service Business:** Provides intangible services to customers (e.g., IT consultancy, Repair shop, Transport company).

UNIT 5: Green Skills-I

Ecosystem, Environmental Conservation & Sustainable Development

Green Skills are the knowledge, abilities, values, and attitudes needed to live in, develop, and support a sustainable, resource-efficient, and eco-friendly society.

UNDERSTANDING ECOSYSTEM & ENVIRONMENT

An **Ecosystem** consists of all living organisms (biotic factors like plants, animals, bacteria) interacting with non-living components (abiotic factors like air, water, soil, sunlight) in a specific geographic area.

MAJOR ENVIRONMENTAL CHALLENGES

Global Warming & Climate Change

Rise in Earth's temperature due to greenhouse gases (CO₂, Methane) trapping heat in the atmosphere.

Resource Depletion

Over-exploitation of non-renewable fossil fuels, groundwater, and mineral resources.

THE 4 RS OF ENVIRONMENTAL CONSERVATION



Figure 8.1: The 4 Rs Framework for Sustainable Living

SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Sustainable Development means meeting the development needs of the present generation without compromising the ability of future generations to meet their own needs. It balances economic growth, environmental protection, and social well-being.

Green Economy

An economy that aims at reducing environmental risks and ecological scarcities, and that aims for sustainable development without degrading the environment (e.g., Solar power generation, Electric Vehicles).

PART B: SUBJECT SPECIFIC SKILLS (40 MARKS)

UNIT 1: Introduction to IT-ITeS Industry

Information Technology Enabled Services, BPO, BPM & Global Applications

The **Information Technology enabled Services (ITeS)** sector leverages computer systems and telecommunication networks to deliver business operations smoothly. It plays a pivotal role in boosting global business efficiency.

IT VS ITeS: KEY DISTINCTIONS

Parameter	Information Technology (IT)	IT enabled Services (ITeS)
Definition	Creation, maintenance, and processing of software and hardware.	Business operations and services delivered over the internet/IT infrastructure.
Primary Focus	Building technology tools, code, databases, and networks.	Using technology tools to serve end customers efficiently.
Examples	Software Development, Database Administration, Web Coding.	Customer Support, Medical Transcription, Payroll Processing.

BUSINESS PROCESS OUTSOURCING (BPO) & BPM

BPO involves contracting non-core business activities (e.g., customer service, billing) to specialized external service providers. **BPM (Business Process Management)** involves managing and optimizing those processes using IT tools.

REAL-WORLD IT APPLICATIONS ACROSS SECTORS

1. IT in Education

Learning Management Systems (LMS), Smartboards, e-Books, and interactive educational apps (e.g., DIKSHA portal).

2. IT in Healthcare

Digital medical diagnosis: Electrocardiogram (ECG), MRI scanners, CT Scans, and Tele-medicine consultations.

3. IT in Banking

24/7 Automated Teller Machines (ATMs), Internet Banking, Real-Time Gross Settlement (RTGS), and Instant UPI Payments.

4. IT in e-Governance

Digital public services: Passport issuance portals, Aadhaar management, Online Income Tax filing, e-Ticketing (IRCTC).

UNIT 2: Data Entry & Keyboarding Skills

Touch Typing, Ergonomics, Keyboard Layout & Speed Measurement

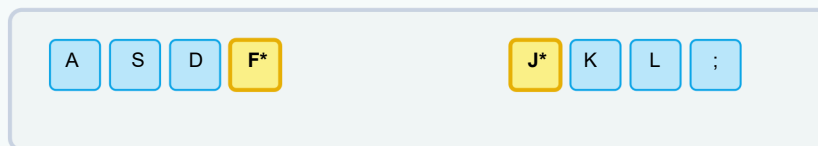
Mastering typing skills is essential for efficient data entry. **Touch Typing** is a method of typing without looking at the keyboard, relying completely on muscle memory built through practice.

CLASSIFICATION OF KEYBOARD KEYS

- **Alphanumeric Keys:** Letter keys (A–Z) and Number keys (0–9).
- **Control Keys:** Ctrl, Alt, Windows logo key, Esc (used in combination or independently).
- **Function Keys:** F1 through F12 (perform specialized tasks depending on the program).
- **Navigation Keys:** Arrow keys, Home, End, Page Up, Page Down, Insert, Delete.
- **Numeric Keypad:** Calculator-style key cluster on the right side for fast numerical entry.

HOME ROW & GUIDE KEYS LAYOUT

Fingers rest naturally on the **Home Row**: Left hand on A, S, D, F and Right hand on J, K, L, ; . The keys 'F' and 'J' are called **Guide Keys** because they feature small raised physical bumps allowing typists to anchor their fingers without looking down.



* Guide Keys 'F' and 'J' feature raised tactile bumps

Figure 10.1: Touch Typing Home Row Finger Positioning

TYPING ERGONOMICS & SPEED MEASUREMENT

Ergonomics involves arranging workspace equipment to support health and efficiency. Sit upright with feet flat on the floor, keep screen distance at 60–65 cm, and elbows bent at 90 degrees.

Typing Speed Calculation Formulas

Gross Speed (WPM) = (Total Characters Entered / 5) / Time in Minutes

Net Speed (WPM) = Gross Speed - (Uncorrected Errors / Time in Minutes)

UNIT 3: Digital Documentation (Part 1)

Word Processing Fundamentals, Text Editing & Formatting Tools

A **Word Processor** is computer software used to create, edit, format, view, and print digital documents (e.g., LibreOffice Writer, OpenOffice Writer, MS Word).

CORE TEXT EDITING OPERATIONS

- **Word Wrap:** The automatic shifting of text to the next line when it reaches the right margin.
- **Cut, Copy, and Paste:** Moving text (Cut: Ctrl + X) or duplicating text (Copy: Ctrl + C) and placing it at a new cursor location (Paste: Ctrl + V).
- **Find and Replace:** Searching for a specific term globally across the document and replacing it automatically with new text (Ctrl + F or Ctrl + H).
- **Undo & Redo:** Reverting the last executed action (Undo: Ctrl + Z) or restoring the undone action (Redo: Ctrl + Y).

CHARACTER VS PARAGRAPH FORMATTING

Character Formatting

Applies to individual letters or words. Includes Font Type, Font Size, Font Weight (Bold, Italic, Underline), Font Color, Subscript (H_2O), and Superscript (X^2).

Paragraph Formatting

Applies to entire paragraphs. Includes Alignment (Left, Right, Center, Justify), Line Spacing, Paragraph Indentation, and Bullets/Numbering.

TEXT ALIGNMENT TYPES SUMMARY

Alignment Type	Shortcut	Visual Effect / Behavior
Left Align	Ctrl + L	Flushes text against the left margin (Default for regular text).
Right Align	Ctrl + R	Flushes text against the right margin (Used for dates, signatures).
Center Align	Ctrl + E	Centers text evenly between margins (Used for main document titles).
Justified	Ctrl + J	Aligns text evenly to <i>both</i> left and right margins (Used in books/newspapers).

UNIT 3: DIGITAL DOCUMENTATION (PART 2)

Page Setup, Tables, Graphic Images & Mail Merge Architecture

ADVANCED PAGE SETUP & FORMATTING FEATURES

- **Page Orientation:** Page layout direction. Can be **Portrait** (vertical/tall) or **Landscape** (horizontal/wide).
- **Header & Footer:** Areas in top and bottom margins where recurring content (page numbers, document title, author) appears across all pages.
- **Page Margins:** The blank white border space between document content and physical paper edges (Top, Bottom, Left, Right).

MAIL MERGE ARCHITECTURE & PROCESS

Mail Merge is a tool used to send personalized, form-style letters or documents to multiple recipients simultaneously. It combines two primary files:

1. Main Document

Contains common boilerplate text, headings, and field placeholders (e.g., standard event invitation letter body).

2. Data Source

A structured data table/spreadsheet containing unique recipient details (Names, Addresses, Phone Numbers).

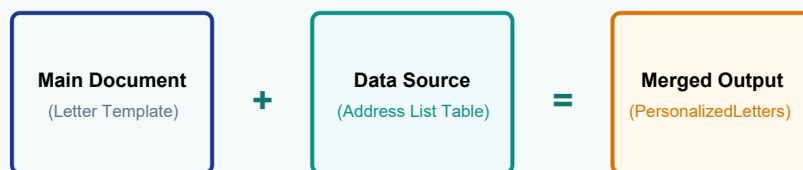


Figure 12.1: The Mail Merge Document Generation Flow

STEP-BY-STEP MAIL MERGE EXECUTION PATH

1. Open LibreOffice Writer and draft the main letter text.
2. Navigate to top menu: Tools > Mail Merge Wizard.
3. Choose **Use current document** and select document type as **Letter**.
4. Select address list / Click **Create** to enter recipient records into the address database table.
5. Insert Merge Fields (e.g., <First Name>, <Address>) into the main text body.
6. Preview and click **Finish** to print or save individual personalized merged documents.

UNIT 4: Electronic Spreadsheet (Part 1)

Grid Architecture, Data Types & Cell Referencing Modes

An **Electronic Spreadsheet** is an interactive application software used for organizing, analyzing, and calculating numerical data in tabular grid format (e.g., LibreOffice Calc, OpenOffice Calc, MS Excel).

SPREADSHEET STRUCTURAL TERMINOLOGY

- **Workbook:** A spreadsheet file that contains one or more individual worksheets.
- **Worksheet:** A single grid page made of rows and columns. Default extension is .ods (Calc) or .xlsx (Excel).
- **Row:** Horizontal grid arrangement labeled with numbers (1, 2, 3...).
- **Column:** Vertical grid arrangement labeled with letters (A, B, C... Z, AA, AB...).
- **Cell & Active Cell:** A single rectangular box formed by the intersection of a row and column. The active cell has a thick dark border indicating current selection.

CELL REFERENCING MODES

A **Cell Reference** identifies a cell's position based on its Column Letter and Row Number (e.g., B5 represents Column B, Row 5).

Referencing Mode	Syntax Example	Behavior When Formula is Copied Across Cells
Relative Reference	=A1 + B1	Cell addresses change automatically relative to new row/column position.
Absolute Reference	=\$A\$1 + \$B\$1	Cell addresses remain strictly fixed using dollar signs (\$). Does not change when copied.
Mixed Reference	=\$A1 or =A\$1	Part of reference (row or column) is fixed, while the other remains relative.

Cell Reference Practice Example

If formula =A1*10 in cell B1 is copied down to cell B2, it automatically updates to =A2*10 (Relative Referencing).

If formula =\$A\$1*10 in cell B1 is copied down to cell B2, it remains =\$A\$1*10 (Absolute Referencing).

UNIT 4: ELECTRONIC SPREADSHEET (PART 2)

Formulas, Statistical Functions, Logical Operations & Chart Creation

FORMULAS VS BUILT-IN FUNCTIONS

CRITICAL RULE: Every formula or function entered into a spreadsheet **MUST ALWAYS** begin with an equals sign (=).

- **Formula:** A user-defined mathematical expression. Example: =A1+A2+A3
- **Function:** A built-in, pre-programmed formula provided by the spreadsheet software. Example: =SUM(A1:A3)

ESSENTIAL BUILT-IN FUNCTIONS REFERENCE

Function Name	Syntax / Structure	Purpose / Output
SUM	=SUM(Range)	Calculates the mathematical total of all cell values in range.
AVERAGE	=AVERAGE(Range)	Calculates the arithmetic mean value of range.
MAX	=MAX(Range)	Returns the highest numerical value in range.
MIN	=MIN(Range)	Returns the lowest numerical value in range.
COUNT	=COUNT(Range)	Counts total number of cells containing numbers.
IF (Logical)	=IF(Test, TrueVal, FalseVal)	Evaluates condition and returns TrueVal if met, else FalseVal.

CHART TYPES & VISUALIZATIONS

Charts visually represent numerical data to help identify trends and make comparisons quickly.

Column / Bar Chart

Compares discrete categories using vertical or horizontal rectangular bars (e.g., student marks per subject).

Pie Chart

Shows proportional size of items relative to the whole sum as slice percentages (100% total circle).

Steps to Insert a Chart

1. Highlight cell data range.
2. Click top menu: Insert > Chart
3. Select Chart Type in wizard.
4. Define Chart Elements (Title, X-axis label, Y-axis label, Legend) and click **Finish**.

UNIT 5: Digital Presentation (Part 1)

Slide Design, Placeholders, Slide Layouts & Display Views

A **Digital Presentation** software application (e.g., LibreOffice Impress, OpenOffice Impress, MS PowerPoint) is used to communicate information visually to an audience using a sequence of digital pages called **Slides**.

ANATOMY OF A SLIDE & MASTER SLIDE

- **Slide:** An individual single page in a digital presentation file.
- **Placeholder:** Dotted rectangular containers on slide layouts holding title text, body bullet points, images, or tables.
- **Slide Master:** The main template slide that controls default styling, background colors, fonts, headers, and logo positioning across *all* slides in the presentation.

PRESENTATION DISPLAY VIEWS SUMMARY

Presentation View	Purpose / Utility
Normal View	Main editing view used to type text, format content, and design individual slides.
Slide Sorter View	Displays thumbnail grid view of all slides. Ideal for reordering, deleting, or hiding slides.
Notes Page View	Allows speakers to add hidden explanatory notes under each slide for reference during talks.
Slide Show View	Full-screen interactive presentation mode displayed directly to the audience.

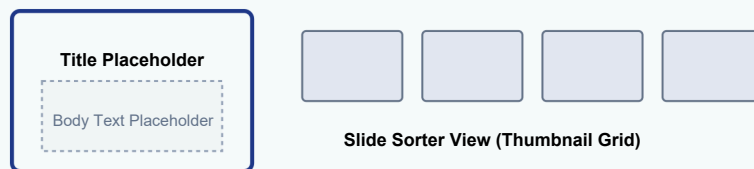


Figure 15.1: Slide Layout vs Slide Sorter Miniature Grid View

UNIT 5: DIGITAL PRESENTATION (PART 2)

Slide Transitions, Custom Animations, Shortcuts & Speaker Handouts

SLIDE TRANSITION VS CUSTOM ANIMATION

This is a fundamental distinction regularly evaluated in theory and practical exams:

Parameter	Slide Transition	Custom Animation
Applied To	The entire slide page as a single unit.	Individual objects inside a slide (text box, image, chart).
Trigger Event	Occurs when moving from one slide page to the next slide page.	Occurs while standing on a specific slide page upon clicking or timer.
Example Effect	Wipe Down, Dissolve, Fade to Black, Push Left.	Fly In, Bounce, Spin, Fade Entrance, Zoom Exit.

ESSENTIAL PRESENTATION SHORTCUTS TABLE

F5 Key

Starts the full-screen Slide Show presentation from the **very first slide**.

Shift + F5 Keys

Starts the full-screen Slide Show presentation from the **currently selected active slide**.

Esc (Escape) Key

Exits/terminates the full-screen Slide Show mode immediately and returns to editing view.

Ctrl + M Keys

Inserts a brand **new blank slide** right after the active slide in presentation.

Professional Presentation Guidelines

- **10-20-30 Rule:** Limit slides to around 10, presentation time under 20 minutes, font size above 30pt.
- **Avoid Clutter:** Use bullet points instead of long paragraphs. Maintain high contrast between text and background.

PRACTICAL LAB WORK MANUAL (SET 1)

Hands-on practical assignments aligned with CBSE Class 9 Computer Lab requirements.

LAB EXPERIMENT 1: Professional Newsletter Formatting

Objective: Create a formatted school newsletter in LibreOffice Writer incorporating character styling, drop caps, header/footer, and image alignment.

Procedure / Commands:

1. Open LibreOffice Writer. Set margins: Top/Bottom 1 inch, Left/Right 1 inch via Format > Page Style .
2. Type Newsletter Heading: "ANNUAL SCHOOL TECH JOURNAL". Center align (Ctrl + E), Font: Arial 18pt Bold, Color: Dark Blue.
3. Insert header: Insert > Header and Footer > Header . Type "DPS IT Club | Volume 1".
4. Type article body paragraphs. Apply Justified Alignment (Ctrl + J) and line spacing 1.15.
5. Insert relevant tech clip-art image via Insert > Image . Right click image, set Wrap > Page Wrap.
6. Save document as School_Newsletter.odt.

Expected Result: Clean two-page newsletter with wrapped graphics and uniform margins.

LAB EXPERIMENT 2: Mail Merge Execution

Objective: Perform Mail Merge to generate Parent-Teacher Meeting invitation letters for 5 students.

Procedure / Commands:

1. Draft the main invitation body in Writer leaving placeholders for student name and marks.
2. Navigate to Tools > Mail Merge Wizard . Select "Use current document".
3. Choose document type "Letter" and click "Select Address List".
4. Click "Create" and enter 5 student records (Fields: Title, First Name, Last Name, Marks).
5. Save address list as Student_Database.csv.
6. Place merge fields into letter body and click **Finish & Merge** to individual new document.

Expected Result: 5 distinct personalized invitation letters generated in a single file.

PRACTICAL LAB WORK MANUAL (SET 2)

Hands-on practical assignments for Spreadsheets and Digital Presentations.

LAB EXPERIMENT 3: Spreadsheet Student Marksheet Analysis

Objective: Create a mark statement in LibreOffice Calc, calculate Total, Average, Result status using formulas/functions, and plot a Column Chart.

Procedure / Commands:

1. Open Calc. Enter Table Headers in Row 1: Roll No (A1), Name (B1), Maths (C1), Science (D1), IT(E1), Total(F1), Average(G1), Result (H1).
2. Enter details for 5 students in rows 2 to 6.
3. In Cell F2 (Total), enter formula: =SUM(C2:E2). Press Enter.
4. In Cell G2 (Average), enter formula: =AVERAGE(C2:E2).
5. In Cell H2 (Result), enter logical function: =IF(G2>=33, "PASS", "FAIL").
6. Use Fill Handle square at bottom-right of cells F2:H2 to drag formula down to Row 6.
7. Highlight range B1:E6. Click Insert > Chart . Choose Column Chart, add Title "Student Marks", click Finish.

Expected Result: Complete calculated marksheet accompanied by a visual Column Chart.

LAB EXPERIMENT 4: Animated Presentation Design

Objective: Create a 4-slide presentation on "Cyber Safety Awareness" with slide master formatting, custom animations, and automated transitions.

Procedure / Commands:

1. Open Impress. Slide 1: Title Slide ("Cyber Safety Rules").
2. Add 3 Content Slides: Slide 2 ("Password Security"), Slide 3 ("Phishing Attacks"), Slide 4 ("Conclusion").
3. Select bullet points on Slide 2. Open Animation Side Panel > Click + **(Add)** > Choose "Fly In from Left".
4. Go to Slide Transition Panel. Choose transition effect "Wipe Down", set speed "Medium". Click **Apply to All Slides**.
5. Press **F5** to run full-screen presentation.

Expected Result: A 4-slide presentation featuring transitions and entrance animations.

COMPREHENSIVE VIVA VOCE QUESTION BANK

25 essential viva voce oral examination questions with model answers for lab tests.

1. **Q: What is the default file extension for a LibreOffice Writer document?**
Ans: The default extension is .odt (OpenDocument Text).
2. **Q: What is the primary difference between Save and Save As?**
Ans: Save updates changes to the existing file in place, while Save As allows saving the document under a new name, new file format, or new directory path.
3. **Q: Name the guide keys on a standard QWERTY keyboard.**
Ans: Keys 'F' (left hand index) and 'J' (right hand index).
4. **Q: What symbol must preceded every spreadsheet formula?**
Ans: An equals sign (=).
5. **Q: What is absolute cell referencing in Calc? Give syntax.**
Ans: Referencing mode where cell address remains fixed using dollar signs when copied (e.g., =\$A\$1).
6. **Q: How do you start a presentation slide show from the current active slide?**
Ans: Press shortcut combination **Shift + F5**.
7. **Q: What is the purpose of Mail Merge?**
Ans: To generate multiple personalized document copies by merging a main letter with a structured address database.
8. **Q: Distinguish between Slide Transition and Custom Animation.**
Ans: Transitions apply to the entire slide moving to the next; animations apply to individual objects on a single slide.
9. **Q: What is Word Wrap in word processors?**
Ans: Automatic wrapping of text to the beginning of the next line when reaching the right paper margin.
10. **Q: Name two ITeS services used in banking.**
Ans: Automated Teller Machines (ATMs) and Online Internet Banking (UPI/NEFT).
11. **Q: What function calculates the arithmetic mean of a range?**
Ans: The =AVERAGE(range) function.
12. **Q: What key exits full-screen slide show mode?**
Ans: The **Esc** (Escape) key.
13. **Q: Define BPO.**
Ans: Business Process Outsourcing — contracting non-core operational tasks to specialized external firms.
14. **Q: Which alignment flushes text evenly to both left and right margins?**
Ans: Justified Alignment (Ctrl + J).
15. **Q: What is the shortcut key to undo an accidental deletion?**
Ans: Ctrl + Z .

THEORY QUESTION BANK - PART A (EMPLOYABILITY SKILLS)

Short Answer Questions (2 Marks Each)

1. Define non-verbal communication. Give two examples.

Ans: Non-verbal communication is the process of conveying messages without using spoken or written words.

Examples: Facial expressions, hand gestures, posture.

2. What is self-confidence? State one way to build it.

Ans: Self-confidence is a feeling of trust in one's abilities and judgment. It can be built by focusing on strengths, setting achievable goals, and maintaining a positive attitude.

3. Differentiate between files and folders in ICT.

Ans: A file is an individual digital container storing data (text, photo, audio). A folder is a directory container used to organize multiple files and sub-folders.

4. What is the role of an entrepreneur in society?

Ans: Entrepreneurs generate employment opportunities, drive economic development, introduce innovative products, and solve societal problems.

5. State two sustainable development habits students can practice in school.

Ans: (1) Switching off lights/fans when leaving computer labs. (2) Reusing single-side printed paper for draft notes.

Long Answer Questions (4 Marks Each)

6. Explain the 7 C's of effective communication in detail.

Ans: Effective communication requires:

1. *Clear:* Message should be easy to understand.
2. *Concise:* Use few words without losing meaning.
3. *Concrete:* Use specific facts and figures.
4. *Correct:* Free from grammatical and factual errors.
5. *Coherent:* Logical flow between ideas.
6. *Complete:* Contains all necessary information.
7. *Courteous:* Polite, respectful, and open tone.

7. Describe the major functions of an Operating System.

Ans: (1) *Processor Management:* Allocates CPU time to running processes. (2) *Memory Management:* Coordinates RAM usage for applications. (3) *File System Management:* Organizes storage, file creation, and deletion. (4) *Device Management:* Controls input/output peripherals via software drivers.

THEORY QUESTION BANK - PART B (SUBJECT SPECIFIC SKILLS)

Short Answer Questions (2 Marks Each)

1. What is Touch Typing? Name the home row keys.

Ans: Touch typing is a method of typing without looking at the keyboard using muscle memory. Home row keys are A, S, D, F (left hand) and J, K, L, ; (right hand).

2. Explain the difference between Header and Footer.

Ans: A Header is text/graphics printed in the top page margin, while a Footer is printed in the bottom margin across all document pages.

3. What is an active cell in a spreadsheet? How is it identified?

Ans: An active cell is the currently selected cell ready for data entry. It is identified by a thick dark rectangular border around it and its address appearing in the Name Box.

4. Define Slide Master in digital presentation software.

Ans: A Slide Master is the top hierarchy slide template that controls default theme colors, backgrounds, fonts, and layout placement across every slide.

Long Answer Questions (4 Marks Each)

5. What is Mail Merge? Explain its components and benefits.

Ans: Mail Merge is a word processing feature used to create personalized mass documents automatically.

Components: (1) Main Document (letter template), (2) Data Source (address record list), (3) Merged Document (final generated output).

Benefits: Saves considerable time, eliminates repetitive typing errors, ensures consistent formatting across thousands of letters.

6. Explain Relative, Absolute, and Mixed cell referencing with suitable formula examples.

Ans:

1. *Relative Referencing:* Formula cell addresses adjust automatically when copied (e.g., =A1+B1 copied down becomes =A2+B2).

2. *Absolute Referencing:* Addresses remain fixed using \$ signs (e.g., =\$A\$1*10 remains unchanged when copied).

3. *Mixed Referencing:* Either row or column is fixed while the other changes (e.g., =\$A1 fixes column A, row varies).

COMPETENCY-BASED & CASE STUDY SCENARIO PROBLEMS

SCENARIO 1: Word Processing Document Repair

Problem: Sunita has typed a 40-page annual project report in LibreOffice Writer. Her teacher informed her that she incorrectly spelled the term "Global Warming" as "Global Warmin" 85 times throughout the document. Additionally, she forgot to include page numbers at the bottom of each page.

Questions:

- Which feature and keyboard shortcut should Sunita use to correct all spelling errors instantly without reading line by line?
- Write the precise menu path to insert automated page numbers at the bottom of every page.

Answers:

- Sunita should use **Find and Replace** (Shortcut: Ctrl + H or Ctrl + F). Type "Global Warmin" in Search box, "Global Warming" in Replace box, and click *Replace All*.
- Navigate to Insert > Header and Footer > Footer > Default Style. Then place cursor in footer area and click Insert > Page Number.

SCENARIO 2: Spreadsheet Sales Tax Calculation

Problem: A store manager keeps a list of 100 items in Column A and their base price in Column B (Row 2 to 101). The GST tax rate of 18% is stored in cell D1. He wants to calculate the final price including tax in Column C.

Questions:

- What formula should he enter in cell C2 so that when copied down to C101, it correctly references the base price in Column B and tax rate in cell D1?
- Why will using formula $=B2+(B2*D1)$ cause errors when copied down to cell C3?

Answers:

- Formula in C2 must be: $=B2+(B2*\$D\$1)$ using **Absolute Referencing** for cell D1.
- Because relative formula $=B2+(B2*D1)$ will shift to $=B3+(B3*D2)$ when copied down, referencing blank cell D2 instead of tax rate cell D1.

50-MCQ MASTER PRACTICE SUITE (PART 1: Q1 TO Q25)

- 1. Which communication method involves body language and gestures?**
A) Verbal B) Non-Verbal C) Written D) Visual **[Ans: B]**
- 2. The physical bumps on keyboard guide keys help position which fingers?**
A) Thumbs B) Middle Fingers C) Index Fingers D) Little Fingers **[Ans: C]**
- 3. Which shortcut key aligns text to the center of a document page?**
A) Ctrl + C B) Ctrl + E C) Ctrl + R D) Ctrl + J **[Ans: B]**
- 4. In LibreOffice Calc, cell address formed by 3rd column and 4th row is:**
A) 3D B) 4C C) C4 D) D3 **[Ans: C]**
- 5. Which function key starts a full-screen presentation slide show from beginning?**
A) F1 B) F5 C) Shift + F5 D) F11 **[Ans: B]**
- 6. BPO stands for:**
A) Business Process Outsourcing B) Basic Program Output C) Business Protocol Office **[Ans: A]**
- 7. The Home Row letter keys for left hand are:**
A) QWER B) ASDF C) ZXCV D) JKL; **[Ans: B]**
- 8. Automatic moving of text to the next line at page margins is called:**
A) Word Wrap B) Text Align C) Line Shift D) Indentation **[Ans: A]**
- 9. Every spreadsheet formula must start with which operator?**
A) + B) = C) @ D) # **[Ans: B]**
- 10. Motion effects applied to individual elements on a single slide are:**
A) Slide Transitions B) Custom Animations C) Slide Masters **[Ans: B]**
- 11. Which part of CPU performs mathematical calculations?**
A) Control Unit B) ALU C) RAM D) ROM **[Ans: B]**
- 12. An entrepreneur who runs a factory converting timber into tables is engaged in:**
A) Trading B) Manufacturing C) Service D) Agriculture **[Ans: B]**
- 13. The 4 Rs of environmental conservation are Reduce, Reuse, Recycle and:**
A) React B) Recover C) Remove D) Rebuild **[Ans: B]**
- 14. Default extension of a LibreOffice Writer file is:**
A) .odt B) .ods C) .odp D) .docx **[Ans: A]**
- 15. Which referencing mode fixes both row and column using \$ signs?**
A) Relative B) Absolute C) Mixed D) Direct **[Ans: B]**

50-MCQ MASTER PRACTICE SUITE (PART 2: Q26 TO Q50)

26. Which view shows miniature thumbnails of all presentation slides?

A) Normal View B) Slide Sorter View C) Notes View **[Ans: B]**

27. What is the shortcut to insert a new blank slide in Impress?

A) Ctrl + N B) Ctrl + M C) Ctrl + S D) Shift + N **[Ans: B]**

28. Short-term high-speed volatile primary memory is:

A) Hard Disk B) RAM C) ROM D) Pen Drive **[Ans: B]**

29. Which component of Mail Merge holds the recipient list?

A) Main Document B) Data Source C) Output Document **[Ans: B]**

30. Typing speed is universally measured in:

A) WPM B) CPS C) BPM D) RPM **[Ans: A]**

31. The shortcut to select all text in a document is:

A) Ctrl + S B) Ctrl + A C) Ctrl + Z D) Alt + A **[Ans: B]**

32. Which function finds the highest value in a range?

A) =HIGH() B) =MAX() C) =TOP() D) =LARGE() **[Ans: B]**

33. Page orientation where width is greater than height is:

A) Portrait B) Landscape C) Vertical D) Square **[Ans: B]**

34. Which of these is an example of an open-source Operating System?

A) Windows 11 B) Linux C) macOS D) iOS **[Ans: B]**

35. In LibreOffice Calc, default vertical alignment of numbers inside cells is:

A) Left B) Right C) Center D) Justified **[Ans: B]**

36. Dotted rectangular containers on slide layouts are called:

A) Placeholders B) Text Boxes C) Frames D) Slots **[Ans: A]**

37. The shortcut to undo the last executed action is:

A) Ctrl + Y B) Ctrl + Z C) Ctrl + X D) Ctrl + U **[Ans: B]**

38. Sustainable development balances economic growth, social well-being, and:

A) Environmental Protection B) Industrial Expansion C) Population **[Ans: A]**

CBSE MODEL THEORY QUESTION PAPER 1

Subject: Information Technology(Code402)|ClassIX

Time Allowed: 2 Hours | Maximum Marks: 50

SECTION A: OBJECTIVE TYPE QUESTIONS (24 MARKS)

Answer any 24 questions out of 30.

1. The process of converting spoken words into written text using software is an example of _____. (1)
2. Write the keyboard shortcut for opening the Find & Replace dialog box in Writer. (1)
3. Mention the home row guide key for the right index finger. (1)
4. An employee working in a corporate BPO provides customer support over telephone. This service falls under _____. (1)
5. State whether True or False: Absolute cell references change when copied across spreadsheet cells. (1)
6. Name the presentation display view used to edit speaker notes below slides. (1)
7. What operator must be typed before entering a function in Calc? (1)

SECTION B: SUBJECTIVE TYPE QUESTIONS (26 MARKS)

Short Answer Questions (Employability Skills - 2 Marks Each)

8. Explain any two barriers to effective communication in a classroom. (2)
9. Differentiate between self-awareness and self-motivation. (2)

Short Answer Questions (Subject Specific Skills - 2 Marks Each)

10. Define Touch Typing. Mention two advantages of maintaining correct ergonomics. (2)
11. Write the steps to insert a table of 3 rows and 4 columns in LibreOffice Writer. (2)

Long Answer / Competency Questions (4 Marks Each)

12. Explain Mail Merge in detail. Describe the role of Main Document and Data Source. (4)
13. A teacher wants to calculate Total, Percentage, and Pass/Fail result for 50 students in Calc. Write formulas/functions using cell references for Row 2 data. (4)

MODEL PAPER 1 - SOLUTIONS & MARKING SCHEME

SECTION A ANSWERS

1. **VoiceRecognition/Speech-to-Text Software.** (1 Mark)
2. **Ctrl + H** (or Ctrl + F). (1 Mark)
3. **'J' Key.** (1 Mark)
4. **ITeS (IT enabled Services) / BPO.** (1 Mark)
5. **False.** (Absolute cell references remain strictly fixed). (1 Mark)
6. **Notes Page View.** (1 Mark)
7. **Equals sign (=).** (1 Mark)

SECTION B ANSWERS

8. **CommunicationBarriers:** (1) *Physical Barrier:* Loud ambient noise in classroom. (2) *Linguistic Barrier:* Teacher using complex jargon unfamiliar to students. (2 Marks)
9. **Self-Awareness vs Self-Motivation:** Self-awareness is understanding one's own character, strengths, and feelings. Self-motivation is the internal drive to take action and achieve goals without external pushing. (2 Marks)
10. **Touch Typing & Ergonomics:** Touch typing is typing without looking at keys using muscle memory. Ergonomic advantages: Reduces physical wrist strain/fatigue and increases typing speed/accuracy. (2 Marks)
11. **Table Insertion Steps:** Click menu Table > Insert Table (or press Ctrl + F12). Enter Columns: 4, Rows: 3, and click **Insert.** (2 Marks)
12. **Mail Merge Components:** Mail merge generates mass personalized letters automatically.
Main Document: Holds standard template text common to all letters.
Data Source: Structured table holding unique details (names, marks) merged into placeholders. (4 Marks)
13. **Spreadsheet Formulas:**
Total Marks in Cell F2: =SUM(C2:E2)
Percentage in Cell G2: =(F2/300)*100
Result in Cell H2: =IF(G2>=33, "PASS", "FAIL") (4 Marks)

CBSE MODEL THEORY QUESTION PAPER 2

Subject: Information Technology(Code402)|ClassIX

Time Allowed: 2 Hours | Maximum Marks: 50

SECTION A: OBJECTIVE TYPE QUESTIONS (24 MARKS)

1. Name the operating system feature that acts as a graphical interface for users. (1)
2. Which shortcut key selects the entire text content in a Writer file? (1)
3. Write the extension used for saving OpenOffice Impress presentation files. (1)
4. Which function returns the lowest value from a cell range in Calc? (1)
5. State whether True or False: Slide transitions apply to individual text objects on a slide. (1)
6. Name the key used to start slide show mode from the active slide. (1)

SECTION B: SUBJECTIVE TYPE QUESTIONS (26 MARKS)

7. Define Sustainable Development. Mention two green skills. (2)
8. Differentiate between Manufacturing and Service businesses with examples. (2)
9. Explain Character Formatting vs Paragraph Formatting in word processing. (2)
10. What is a Cell Reference? Differentiate between Relative and Absolute references. (2)
11. Describe Slide Sorter View. State two advantages of using it. (2)
12. Rahul wants to design a 5-slide presentation on "Clean India Mission". Describe the steps to apply slide transitions, custom animations, and automated timings. (4)

MODEL PAPER 2 - SOLUTIONS & MARKING SCHEME

SECTION A ANSWERS

1. **GUI(GraphicalUserInterface).** (1 Mark)
2. **Ctrl + A.** (1 Mark)
3. **.odp** (OpenDocument Presentation). (1 Mark)
4. **=MIN(range).** (1 Mark)
5. **False.** (Transitions apply to the whole slide; animations apply to individual objects). (1 Mark)
6. **Shift + F5.** (1 Mark)

SECTION B ANSWERS

7. **SustainableDevelopment:** Development that meets current needs without compromising future generations' resources. Green skills: Waste segregation, energy conservation. (2 Marks)
8. **Manufacturing vs Service Business:** Manufacturing produces tangible goods from raw materials (e.g., shoe factory). Service business provides intangible value/services (e.g., bank, salon). (2 Marks)
9. **Character vs Paragraph Formatting:** Character formatting applies to selected text letters (font, bold, color). Paragraph formatting applies to whole paragraph blocks (alignment, line spacing, margins). (2 Marks)
10. **Cell Referencing:** The address pointing to a cell location. Relative references (A1) adjust automatically when copied; Absolute references (=\$A\$1) stay locked. (2 Marks)
11. **Slide Sorter View:** Miniature thumbnail view of all slides. Advantages: (1) Allows easy drag-and-drop reordering of slides. (2) Helps quickly delete or hide unnecessary slides. (2 Marks)
12. **Presentation Creation Steps:**
 1. Create 5 slides using Normal View.
 2. Select slide > Open *Slide Transition Panel* > Choose effect (e.g., Push) > Set speed.
 3. Select text/image objects > Open *Custom Animation Panel* > Add entrance effect (e.g., Fly In).
 4. Set transition timer under "Advance Slide" > Press **F5** to run slide show. (4 Marks)

A-Z TECHNICAL TERMS GLOSSARY & DICTIONARY

Term / Acronym	Technical Definition / Meaning
Absolute Reference	A fixed spreadsheet cell reference denoted with \$ signs that does not change when copied.
Active Cell	The highlighted cell currently selected in a spreadsheet with a thick border ready for input.
BPO	Business Process Outsourcing — contracting business tasks to external specialized service providers.
CPU	Central Processing Unit — the primary hardware brain of the computer that executes instructions.
Data Source	The database/table file containing recipient records merged into a main document during Mail Merge.
Ergonomics	The science of designing workplace furniture and computer equipment to minimize physical strain.
Guide Keys	Keys 'F' and 'J' on a QWERTY keyboard featuring tactile raised bumps for home row finger positioning.
Header / Footer	Margins areas at the top/bottom of document pages holding recurring information like page numbers.
ITeS	IT enabled Services — business processes delivered over information technology networks.
Mail Merge	Feature that merges a main text letter with an address list to produce mass personalized documents.
Operating System	System software managing computer hardware resources and providing a GUI interface for applications.
Placeholder	Dotted rectangular containers on presentation slides designed to hold titles, text, or images.
Slide Transition	Visual motion effect occurring when advancing from one slide page to the next during a show.
Touch Typing	The technique of typing fluently without looking at keys by relying on finger muscle memory.
Word Wrap	Automatic shifting of typed text to the next line when reaching the right paper margin.

QUICK REVISION CHEAT SHEET & EXAM STRATEGY

TOP 10 KEYBOARD SHORTCUTS FOR EXAMS

Ctrl + C : Copy selected text	Ctrl + V : Paste copied text
Ctrl + X : Cut selected text	Ctrl + Z : Undo last action
Ctrl + Y : Redo undone action	Ctrl + H : Find and Replace
Ctrl + E : Center align text	Ctrl + J : Justify align text
F5 : Start Slide Show from 1st Slide	Shift + F5 : Start Show from active Slide

SPREADSHEET FORMULA CHEAT SHEET

- **Total Sum:** =SUM(A1:A10)
- **Average:** =AVERAGE(A1:A10)
- **Maximum Value:** =MAX(A1:A10)
- **Minimum Value:** =MIN(A1:A10)
- **Conditional IF:** =IF(A1>=33, "PASS", "FAIL")

Exam Day Strategy 1: Time Allocation

Spend 20 mins on Section A (Objective 24 marks), 70 mins on Section B (Subjective 26 marks), and keep 30 mins for thorough review.

Exam Day Strategy 2: Precise Steps

When writing answers for 4-mark software operations, always write numbered step-by-step navigation paths using exact menu titles.

BEST OF LUCK FOR YOUR CBSE CLASS 9 IT EXAMS!

Master the practicals, memorize key shortcuts, and write clean, structured answers.