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## **1. Computer Fundamentals and Basic Concept of Software**

- 1.1 Computer: - Definition, History, Generation, Characteristics, Types & Applications.
- 1.2 Overview of a computer system-
  - 1.2.1 Data and data processing
  - 1.2.2 Hardware
    - 1.2.2.1 Definition of Hardware
    - 1.2.2.2 Input Unit:- Keyboard, Mouse, Scanner, etc
    - 1.2.2.3 CPU:- Arithmetic Logic Unit (ALU), Control Unit (CU), Memory Unit (MU)
    - 1.2.2.4 Output Unit:- Monitor, Printer, etc
    - 1.2.2.5 Storage devices: - Primary & Auxiliary Memory (Floppy Disk, Hard Disk, Compact Disk, DVD, Flash disk etc.)
    - 1.2.2.6 Others:- Network card, Modem, sound card, etc
- 1.3 Liveware
- 1.4 Firmware and Cache Memory
- 1.5 Setting & Protection of Computer Room and Computer
- 1.6 Concept of Computer related threats (Virus, worms, Trojan, phishing etc) remedies and protection
- 1.7 Concept of Multimedia
- 1.8 File Management base :
  - 1.8.1 Physical Structure of the disk
  - 1.8.2 Concept of File and folder
  - 1.8.3 Wildcards and Pathname
  - 1.8.4 Type of files and file extension
- 1.9 Number Systems
  - 1.9.1 Introduction to binary, octal, decimal and hexadecimal number systems
  - 1.9.2 Introduction to ASCII and Unicode standards
- 1.10 Software
  - 1.10.1 Definition & Types of Software
  - 1.10.2 Programming Language

## **2. Computer Networking**

- 2.1 Introduction to Networking
- 2.2 Types of Network (LAN, WAN etc.)
- 2.3 Concept of E-mail/ Internet/ Extranet/ Intranet, World wide web (WWW)
- 2.4 Familiarity with internet browsers (e. g Internet, explorer, Firefox, Opera, Safari, Google Chrome etc)
- 2.5 Introduction to IP address, subnet mask and default gateway
- 2.6 Introduction to Network Media, Topology and Protocol
- 2.7 Setting Up Microsoft Network
- 2.8 Dial- Up Networking

## **3. Hardware Maintenance and Troubleshooting**

- 3.1 Hardware Maintenance
  - 3.1.1 Configure and apply BIOS settings
  - 3.1.2 Motherboard components, their properties and purposes (RAM slots, Chipsets, Jumpers, CPU sockets, etc.)
  - 3.1.3 Installing and configuring expansion cards (Sound cards, Network cards, Graphics cards, etc)
  - 3.1.4 Installing and configuring storage devices
  - 3.1.5 Types and features of display devices (CRT, LCD, LED, Plasma)
  - 3.1.6 Connector types (BNC, RJ45, HDMI) and associated cables
  - 3.1.7 Installing and configuring various peripheral devices (Mouse, Keyboard, Scanner, Printer, Speaker)
- 3.2 Troubleshooting
  - 3.2.1 Troubleshooting of computer and its peripherals (keyboard, mouse, printer, scanner, speaker)
  - 3.2.2 Troubleshooting of connectivity (cables, network, etc.)

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- 3.2.3 Troubleshooting of memory, processor, storage, display
  - 3.2.4 Troubleshooting of operating system and application software

#### **4. Operating System**

- 4.1 Introduction to Operating System
- 4.2 Types of Operating System
- 4.3 Function of Operating system
- 4.4 Command line operation (e. g copy command, move command to view and set different file attributes etc)
- 4.5 Windows
  - 4.5.1 Introduction to GUI
  - 4.5.2 Introduction of windows Operating System
    - 2.5.2.1. Basic windows Elements- Desktop, Taskbar, My Computer, Recycle Bin, etc.
    - 2.5.2.2. Starting and shutting down windows
    - 2.5.2.3. File Management with Windows Explorer
    - 2.5.2.4. Windows applications: (e.g Control Panel, Character Map, Paint etc)
    - 2.5.2.5. Finding file of folders and saving the result
    - 2.5.2.6. Starting a program by command line operation
    - 2.5.2.7. Changing window settings
      - 2.5.2.7.1 Adding/Removing programs
      - 2.5.2.7.2 Clearing the contents of document menu
      - 2.5.2.7.3 Control panel items
    - 2.5.2.8 Creating shortcut (icons) on desktop
    - 2.5.2.9 System tools: - disk scanning, disk defragmenter, backup, restore, format

#### **5. Word Processing**

- 5.1 Concept of word Processing
- 5.2 Types of word Processing
- 5.3 Introduction to word Processor
  - 5.3.1 Creating saving and Opening the documents
  - 5.3.2 Elements of word Processing Environment (Menu, Toolbars, Status bar, Rulers, Scrollbars, etc.)
  - 5.3.3 Copying, Moving Deleting and Formatting Text (Font, Size, Color, Alignment, Line & paragraph spacing)
  - 5.3.4 Finding and Replacing Text
  - 5.3.5 Familiar with Devnagari/Romanize Fonts
  - 5.3.6 Creating lists with Bullets and Numbering
  - 5.3.7 Creating and Manipulating Tables
  - 5.3.8 Borders and Shading
  - 5.3.9 Use of Indentation and Tab Setting
  - 5.3.10 Creating Newspaper Style Documents Using Column
  - 5.3.11 Inserting Header, Footer, Footnotes, Endnotes, Page Numbers, File Page break Section break, Graphics, Pictures, Charts, Word Art, Symbols & Organization Chart
  - 5.3.12 Operating & saving different types of document
  - 5.3.13 Changing Default settings
  - 5.3.14 Mail Merge
  - 5.3.15 AutoCorrect, Spelling and Grammar Checking and Thesaurus
  - 5.3.16 Customizing menu & toolbars
  - 5.3.17 Security Technique of Documents
  - 5.3.18 Master Document, Cross Reference, Index, Table of Content.
  - 5.3.19 Setting Page Layout, Previewing and Printing Documents

#### **6. Electronic Spreadsheet**

- 6.1 Concept of Electronic Spreadsheet
- 6.2 Types of Electronic Spreadsheet
- 6.3 Organization of Electronic Spreadsheet application (Cell, Rows, Columns, Worksheet, Workbook and workspace)

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- 6.4 Introduction to spreadsheet application
    - 6.4.1 Creating, Opening and Saving Work Book
    - 6.4.2 Elements of Electronic Spreadsheet Environment (Menu Toolbars, Status bar Rulers. Scrollbars etc
    - 6.4.3 Editing, Copying Moving Deleting Cell Contents
    - 6.4.4 Familiar with Devnagari Fonts
    - 6.4.5 Formatting Cells (Font ,Border, Pattern, Alignment, Number and Protection)
    - 6.4.6 Formatting Rows, Column and sheets
    - 6.4.7 Using Formula- Relative cell and Absolute Cell Reference
    - 6.4.8 Using basic Functions
    - 6.4.9 Generating Series
    - 6.4.10 Changing default options
    - 6.4.11 Sorting and Filtering Data
    - 6.4.12 Summarizing Data with Sub Totals
    - 6.4.13 Creating Chart
    - 6.4.14 Inserting Header and Footer
    - 6.4.15 Spell Checking
    - 6.4.16 Customizing Menu & Toolbars
    - 6.4.17 Importing form and Exporting in to other Formats
    - 6.4.18 Pivot Table, Goal Seek, Scenario & Audit
    - 6.4.19 Page Setting, Previewing and Printing

## **7. Database System**

- 7.1 Introduction to Data, Database and DBMS
- 7.2 Basic Concept of Tables, Fields, Records, Relationships and Indexing
- 7.3 Introduction to database application
  - 7.3.1 Data Types
  - 7.3.2 Creating Modifying & Deleting Tables and Formatting & Validating Field Data
  - 7.3.3 Creating Modifying, Deleting & Using simple Queries
  - 7.3.4 Creating, Modifying & Deleting Forms/ Reports/ Macros

## **8. Presentation System**

- 8.1 Introduction to presentation application
  - 8.1.1 Creating, Opening & Saving Slides
  - 8.1.2 Formatting Slides
  - 8.1.3 Slide show
  - 8.1.4 Animation
  - 8.1.5 Inserting Built- in picture, Table, Chart, Graphs Organization Chart etc.

## **9. Web Technology**

- 9.1 Introduction to Web Page and Content Management System
- 9.2 Introduction to HTML
- 9.3 HTML document
  - 9.3.1 Html Tags
  - 9.3.2 Working with Text, Hyperlinks, Images, Lists, Forms, Tables, Frames, etc.
- 9.4 Familiarity with Cascading Style Sheet, Rich Site Summary and social networking
  - 9.5 Concept of Web server and Proxy server