

Detailed Syllabus –Computer Hardware and NetworkingAssociate

Module – 1	Fundamentals of IT Unit -1 Computer Fundamentals Knowing computer- What is a Computer, Characteristics of a Computer, Advantages and Disadvantages of a Computer, History of Computer, Generation of Computer, Classification of Computers, and Basic Application of Computer. Components of computer- Input unit, Arithmetic and logic unit, Control unit, Storage /Memory unit, Output unit Computer Memory- What is computer memory, Types of memory, Difference between Primary memory & Secondary memory Concepts of Hardware and Software - Definition of Hardware and Software, Input devices, Secondary Storage devices, Output devices, System software, Application Software. History of Computer Language- Introduction to program & programming Language, First Programming Language(Machine language),Assembly language, High level language, translators (Assembler, Compiler & Interpreter). Working with Windows -Introduction to windows and its features, Components of windows (desktop, icons, start button etc.), Operations on windows, Managing files and folders, Control Panel, Personalizing your window, Window Accessories, compression utilities (winrar, winzip). Introduction to multimedia- What is multimedia, elements of multimedia (Text, Image, Fonts, Audio andVideo), different formats of image, audio and video files, playing audio & video in computer system, application of multimedia in various fields. Unit- 2Office Automation Package Word: Word processing Basics, Text creation and Editing, Formatting text and Paragraph, Header and footer, graphics, table, Mail merge, Page setup and Print. Excel : Elements of spread sheet, Manipulation of cells, Formula and Functions, Managing Data, charts and Graphs, Page Setup and Print PowerPoint: Basics of presentation, slide preparation and inserting objects, templates and color schemes, animations and slide presentation, printing handouts.
Module - 2	Connecting to the World

	<p>Unit- 1 Internet Introduction to Internet, Advantages and disadvantages of internet, Domain Name System, Internet Connectivity, WWW and Web browsers, Navigating through web, Uploading & Downloading, Services on web, Using social media sites.</p> <p>Unit -2 E-mail Introduction to E-mail, E-mail addressing, Creating new email account, Composing and sending email, Replying and forwarding, Sorting and searching email, Sending email to multiple users, Sending attachments, Mailbox: inbox and outbox</p> <p>Unit – 3 Basic Internet Security Concepts Need of Security over internet, security threats, viruses and malwares, e-mail spam, security and privacy issues related to online shopping and social networking sites, safety measures-choosing strong password, Antivirus, Firewalls, safe browsing.</p> <p>Unit – 4 Online Data storage : Cloud What is cloud and cloud storage, benefits of online storage over local storage and portable storage, Types of cloud storage (Public, private, hybrid and community cloud), cloud storage service providers).</p> <p>Unit – 5 Introduction to e-Governance and Digital Financial Services Introduction to e-Governance, Scope of e- Governance, Types of Interactions in e-Governance, National e-Governance Programs, e-Governance services in India. Savings and its benefits. Types of bank account, What is digital financial services, Moving from traditional to digital banking, Digital banking products- ATMs, Cards, cash deposit machines, Digital payment methods, knowledge of Safety and Security of Digital Payments</p>
<p>Module - 3</p>	<p>Using Smartphone Smartphone & smartphone operating systems (Google Android, Apple iOS, Windows phone), Using Bluetooth for connecting devices from mobile phones to headphones, and computer mouse to computers, Connecting to Internet using Mobile Hotspot, WiFi, USB Cable etc, Google account, Adding Contacts, what are gestures, Download Apps, Uninstall/ Disable Apps, Using Maps & Navigation, Phone Backup & Reset. Security over smart phones (Pattern Lock, Number Password, Fingerprint Scanning, Face Recognition), App Lock, Secure Web Browsing.</p>
<p>Module - 4</p>	<p>Basic Electronics Unit- 1 Analog Current and Voltage, Voltage up & down, Passive Components (Resistors, Capacitors,</p>

	<p>Inductors, Transformers), Active Components (Semi-Conductors, Diodes, PN Junctions), Transistors (PNP, NPN, FET & MOSFET), Electronic circuit and Ohm's Law, Rectifiers (Half Wave, Full Wave, Bridge Rectifiers),Power Supply (Basic Switch Mode Power Supply(SMPS), Basic uninterrupted Power Supply(UPS)</p> <p>Unit- 2 Digital Number Systems and its conversions, BCD Numbers, ASCII Code, Logic Gates & Truth Tables, Half Adder & Half Subtractor, Multiplexer and DE multiplexer, Encoder & Decoder, Flip Flops and Types of Flip Flops, Latches, Registers & Counters, Trouble shooting</p>
Module - 5	<p>Computer Hardware & Peripherals</p> <p>Unit-1 Internal Components Introduction to PC architecture, Microprocessor, Motherboard, Memory (Primary & Secondary), Chipset, BIOS and POST, IDE/PATA & SATA Devices(Hard Disk Drive and CD/DVDs Drives), SMPS, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card, VGA and SVGA Cards, Sound Card,, Interface Card, I/O Cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types.</p> <p>Unit-2 External Components Monitor and types of Monitors, Printers and types of Printers, Scanner, Keyboard, Mouse, Modem, Digital Camera, Sound, Ports and Connectors, Batteries, Power Supply, Pen Drives, SCSI interface devices.</p> <p>Unit- 3 Assembling Computer Overview of the Assembly Process and Safety Issues, Creating a Computer Inventory, The Computer Case and Power Supply ,Preparing the Motherboard for Installation , Installing the Motherboard ,Installing the Floppy Drive, Hard Drive, CD-ROM, and DVD , Video Card Installation, Booting the System for the First Time</p>
Module - 6	<p>Operating System & Diagnostic Tools</p> <p>Unit-1 Operating System & Software Installation Operating System and types of operating systems, Functions of Operating System, File system (FAT and NTFS), Window installation, Unix and Linux , Installing application software and settings, Backup and Restore, Trouble shooting and referring manuals</p> <p>Unit-2 Device Installation Graphic Card, Sound Card, LAN Card, Wireless LAN Card, SCSI Card, External Drive, Flash Cards, Web Camera, CCTV Camera, Mobile Devices, Modem, Printer,Projector</p> <p>Unit- 3 Diagnostic Tools & PC Maintenance introduction to Diagnostic tools, Virus & its types, Effect of virus on computer system, Installing & Configuring Antivirus Software, Data Recovery, PC care & maintenance, Electrical</p>

	<p>Power Issues, Troubleshooting PC Hardware, Solutions for common computer issues (computer doesn't start, devices not working/recognize, applications running slowly/hang, Not enough space etc.), Handling issues related to printer (paper jam, printer isn't printing, paper size mismatch, Printer error etc.), Handling issues related to scanner (paper jam, poor image quality etc.) , using projector.</p>
<p>Module - 7</p>	<p>Network Essentials & Management</p> <p>Unit-1 Basic Concepts of Network What is Network, Computer Network Architecture (Peer to Peer network and Client/ Server network), Network Types (LAN, MAN, WAN), Internetwork and types of internetwork (Intranet and Extranet), Network Topologies, Transmission Media (Wired & Wireless, Networking Model (OSI & TCP/IP), Network protocols (HTTP, FTP and other types of protocols)</p> <p>Unit-2 Network Hardware & Components Network Cables and Connectors, Networking Devices (Modem, NIC, HUB, Bridge, Switch, Repeaters, Router, Gateway etc.),</p> <p>Unit- 3 IP Addressing & Sub-netting Basics Introduction to TCP/IP and sub-netting, IP Address: Networks & Hosts, Subnet mask, Network Classes, Configuring IP address and sub-netting, Troubleshooting</p>
<p>Module - 8</p>	<p>Server Installation & Administration</p> <p>Unit -1 Installing & Configuring Servers Installing Windows Server, Linux/Unix Server, Configuring server roles & features, Installing and administering Active Directory, Installing & Configuring DNS, DHCP, IIS Web Server, File Server, Print Server, Installing networking & storage devices like DAS, NAS, RAID etc., Cable Crimping</p> <p>Unit-2 User management and Group Policy management Create and Edit GPO, Windows Settings, Control Panel Settings, Startup, Shutdown, Logon, and Logoff Scripts, Delegate Permissions for Group Policy</p>
<p>Module - 9</p>	<p>Communication & Employability Skills</p> <p>Unit-1 Basics of Communication Skill Communication and its importance, Principal of effective communication, Types of communication, Body language, Listening Skills - Importance of Effective Listening, Difference between Hearing and Listening, Measures to improve listening.</p> <p>Unit- 2 Employability Skills Employment skills- Contents of good Resume, Guidelines for writing Resume, Facing interviews, Do's & Don'ts for an interview.</p>

