

| CSE-101 | Computer Fundamentals | 2.0 | 2.0 |
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| | <p>History, Basic organization of computer, Types of computers: main frame, mini and micro computers; Different types of micro computers, I/O devices; The parts of a computer system, hardware, software. Critical components of computer system, processor, memory, input and output devices, storage. Categories of software. Categories of today's computer. Bit, byte and words; Number systems: binary, hexadecimal and octal numbers; Converting from one number system to another number, converting to decimal from another base, converting from decimal to another base, converting from a base other than 10 to a base other than 10, shortcut method for binary to octal conversion, shortcut method for octal to binary conversion, shortcut method for binary to hexadecimal conversion, shortcut method for hexadecimal to binary conversion. Fractional numbers. Different types of memory, How data is stored on a disk, how data is organized on a magnetic disk, tracks and sectors, clusters. How the operating system finds data on a disk, master boot record, FAT, root folder, data area, Optical storage devices, CD-ROM, pits and lands, DVD-ROM; BIOS, Types of software's, System software's; Operating system; Editors; Assemblers; Compilers; Interpreters; System utilities, Application packages, Multimedia; Robotics; Computers & IT, Computer virus.</p> <p>Peripherals Devices: Printer; Keyboard; Mouse; Plotter; Scanner; Disk Storage; Controller cards; Buses.</p> <p>Computer Networks: Computer networks, network card and accessories; Brief idea on network operating systems and popular NOS like Windows NT, UNIX, NOVEL, Data Communications and computer networks, basic elements of a communication system, data transmission modes, simplex, half duplex, full duplex. Data transmission speed, narrowband, voice band, broadband. Data transmission media, twisted-pair wire, coaxial cable, microwave system, communication satellite, optical fibers. Digital and analog transmission, modulation technique, AM, FM, PM. Data transmission services, dial-up line, leased line, ISDN, VAN. TCP/IP, SMTP, FTP, HTTP, DNS, SNMP, TELNET. Data and Information, Internet, internet, intranet, extranet. How networks are structured, LAN, CAN, MAN, WAN. Server-Based Networks, file server network, client/server network. Network topologies, bus, star, ring, mesh, and hybrid.</p> <p>Application Packages: Different application packages like Word-processing, Spreadsheet analysis and Data base handling;</p> <p>Programming Concept: Problem analysis, Algorithm build-up, Flowcharts and pseudo-coding.</p> <p>Boolean algebra and logic circuit: logic addition, logic multiplication, complementation, operator precedence. The principle of duality, Theorem of boolean algebra, idempotent law, absorption law, involution law, De Morgan's law. Boolean functions. Logic gates, AND gate, OR gate, NOT gate, NAND gate, NOR gate, Logic circuits, The universal NAND gate, The universal NOR gate, Exclusive-OR, Equivalence functions, Design of Half-adder, Design of Full-adder.</p> <p>Computer arithmetic: why binary, binary arithmetic, addition, subtraction, additive method of subtraction, 1's compliment, 2's compliment, subtraction using 1's and 2's compliment.</p> | | |