

## **Computer Science (Code No. 10)**

1. Fundamentals-of-Computer-Processing System: Electronic digital computer and its parts (CPU Memory, I-O devices), machine instructions: opcode, operand, instruction counter, instruction cycle, memory addressing, registers in CPU, Number systems (digital, binary, octal, hexadecimal), codes: character codes (ASCIL, EBCDIC), BCD code, Excess3 code, Software (system and application software). Electronic data Processing Concepts: Data Information, File, Database, Need, Quality, Value. Categories of information, organization of information in business. Benefits of EDP, Application of EDP in education, management, public delivery, bank, financial accounting, inventory control etc, Classification of computers: Classification based on size, design and purpose, History of computer: features of different generations.
2. Programming languages: machine language, assembly language, high-level language, 3 GL, 4GL languages, Graphic user interfaces, Algorithm, Flowchart, developing programs in PASCAL language.
3. Digital Circuits: Logic families, gates, flip flops, Design of combinational and sequential circuits, Boolean algebra and minimizations techniques.
4. Personal computer software: Word processing packages, Spreadsheet packages, database management system packages, Desk top publishing, Computer animation packages, Introduction to MS Office.
5. Operating System concepts: Need of operating system, categories of operating system, functions of operating system, familiarity with common operating systems: DOS, Windows 2000, UNIX.
6. Computer and communication: Need of data transmission over long distance, Communication channels: twisted pair, coaxial cable, microwave radio waves, optical fibre, satellite, analog and digital transmission, serial and parallel transmission, modems, networking concepts: LAN, WAN.
7. Internet topology: Concept of internet, how does internet work, internet protocols, net surfing and searching, browsers, search engine, world wide web, HTML and Java concepts.
8. E-Commerce: What is E-commerce, advantages and growth of E-commerce, electronic payment system digital currencies, cyber cash E-cash, credit cards, smart cards, supply chain management, security considerations.
9. Recent advances in concept and products in Information Technology: Parallel processing, Artificial Intelligence and expert systems (concept only), Computer Aided Design and Manufacturing, Wireless communication, Convergence technology, E-Governance.