CSE Syllabus For General Aptitude

Topics	Sub-topics
Verbal Aptitude	• English grammar • Vocabularies • Reading and comprehension • Narrative sequencing
Quantitative Aptitude	• Data interpretation • 2 & 3-dimensional plots • Maps & tables • Numerical computation & estimation that includes ratios, percentages, powers, exponents & logarithms • Permutations & combinations • Mensuration & geometry • Elementary statistics & probability
Analytical Aptitude	• Logic: Deduction & induction Analogy • Numerical relations & reasoning
Spatial Aptitude	• Transformation of shapes like translation, mirroring , rotation & scaling • Assembling & grouping • Paper folding, cutting, and patterns (2 & 3 dimensions)

CSE Syllabus For Core Subjects

Subject	Syllabus
Digital Logic	• Boolean algebra • Combinational and sequential circuits • Minimization • Number representations and computer arithmetic (fixed and floating-point)
Computer Organization and Architecture	• Machine instructions and addressing modes • ALU, data- path and control unit • Instruction pipelining, pipeline hazards • Memory hierarchy: cache, main memory and secondary storage • I/O interface (interrupt and DMA mode)

Programming and Data Structures	• Programming in C • Recursion • Arrays • Stacks • Queues • Linked lists • Trees • Binary search trees • Binary heaps • Graphs
Algorithms	• Searching • Sorting • Hashing • Asymptotic worst-case time and space complexity • Algorithm design techniques: greedy, dynamic programming and divide- and- conquer • Graph traversals • Minimum spanning trees • Shortest paths
Theory of Computation	• Regular expressions and finite automata • Context-free grammars and push-down automata • Regular and context-free languages • Pumping lemma • Turing machines and undecidability.
Compiler Design	• Lexical analysis • Parsing • Syntax-directed translation • Runtime environments • Intermediate code generation • Local optimizatio • Data flow analyses: constant propagation, liveness analysis, common subexpression elimination
Operating System	• System calls, processes, threads • Inter- process communication • Concurrency and synchronization • Deadlock • CPU and I/O scheduling • Memory management and virtual memory • File systems
Databases	• ER- model • Relational model: relational algebra, tuple calculus, SQL. • Integrity constraints, normal forms. • File organization, indexing (e.g., B and B+ trees). • Transactions and concurrency control

Computer Networks	• Concept of layering: OSI and TCP/IP Protocol Stacks • Basics of packet, circuit and virtual circuit-switching • Data link layer: framing, error detection, Medium Access Control, Ethernet bridging • Routing protocols: shortest path, flooding, distance vector and link-state routing • Fragmentation and IP addressing • IPv4, CIDR notation, • Basics of IP support protocols (ARP, DHCP, ICMP), Network Address Translation (NAT) • Transport layer: flow control and congestion control, UDP, TCP, sockets • Application layer protocols: DNS, SMTP, HTTP, FTP, Email