

## **SYLLABUS-MCA (LEET) ENTRANCE TEST**

**Mathematical Foundation:** Relations and Functions- Types, Inverse Trigonometric Functions, Algebra-Matrices, Determinants. Calculus- Continuity and Differentiability, Applications of Derivatives, Integrals, Differential Equations, Vector and 3-D geometry, Linear Programming Probability.

**C Programming & Data Structures:** Data types, Conditional statements, Loops, Arrays, Pointers. Files; Data Structures- Types, Stack, Queue, Tree, Graph, Sorting, Searching, Linked List.

**Database Systems:** Basic Concepts, Architecture, Data Independence, Data Models- ER, Network, Hierarchical, Record, RDBMS, Relational Algebra & Calculus, Normalization, SQL, PL/SQL

**Operating System:** Operating system functions, and characteristics, Resource Manager, File Systems & device management, CPU Scheduling, Storage Management, Paging and Segmentation, Virtual memory, Deadlocks, Concurrent Processes.

**Computer Organization & Architecture:** Computer Arithmetic, Digital circuits, Interrupt Structures, Memory Organization, Input Output Organization, and Instruction set architectures, Reduced Instruction Set Computing (RISC): Complex Instruction Set Computing (CISC), Pipelining.

**Computer Networks:** **Reference models:** ISO-OSI, TCP/IP; Transmission Media, modulation and Multiplexing; Data Link Layer- Framing, Flow, Error Control, Sliding Window Protocols; MAC; Network Layer- Routing, Congestion Control, IPV4, Transport Layer- Flow control, TCP; Applications Layer.

**OOPS using C++:** Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Constructors & Destructors, Dynamic Memory Allocation, Pointers, Polymorphism, Overloading, Inheritance, and Exceptions.