

Syllabus for MCA, Artificial Intelligence and Data Science Programme

Part 1: Analytical Ability and Logical Reasoning:

The questions in this section shall cover analytical and logical reasoning and are based on Series, Relationships, Classification, Coding, Permutations and Combinations and Inference, Numerical Problems.

Part 2: Mathematics:

Set Theory, Probability and Statistics, Logarithms, Geometric and Harmonic progressions, Determinants and Matrices, Coordinate Geometry & Applications. Basic Calculus: Limit of functions, continuous function, differentiation of function, Integration and their applications. Trigonometry & applications. Vectors: Concepts of vectors & vector algebra, applications of Vectors.

Fundamentals of logic, Relations and Functions, Counting Techniques: Basics of Counting, Pigeonhole Principle, Recurrence relations, Graphs: Basic concepts of Graph and its applications. Introduction to trees, Applications of trees, Boolean Algebra and Circuits.

Part 3: Computer Science

Programming and Basic Data Structures:

Introduction to Algorithms, Flow charts, Assembly language and high-level language, Programming in C: Tokens, Identifiers, Data Types, Sequence Control, Subprogram Control, Arrays, Structures, Functions. Data Structures: Abstract data types, stacks, queues, Singly Linked Lists.

Basic sorting algorithms: bubble sort, selection sort, insertion sort.

Computer Organization & Architecture and Operating Systems:

Basic functional blocks of a computer, Number Systems, Conversion & Arithmetic, Complements.

Introduction to operating systems, Structure and Basic functions, types of OS, Operating System Services.

Application development:

Internet and WWW Architecture, The Web browsers, HTML, Structural & formatting tags, Page elements, Tables, forms