

**Admission to PG Programs****MCA, M.Sc. (AI & ML), M.Sc. (Bioinformatics) and PGDCA**

(Approved/Confirmed by BoS dated Dec 04/18, 2025 & FM on 24-12-2025)

J-CAT (Jamia-Computing Aptitude Test) Entrance Test Syllabus, 2026-27**Format: Multiple-Choice Questions (Approx. Equal Distribution for all the components)**

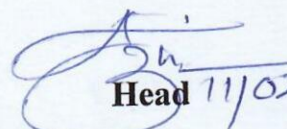
- Quantitative Aptitude:** Number Systems, Positional Systems, LCM & HCF; Percentage, Profit & Loss, Simple & Compound Interest; Time, Speed & Distance, Time & Work; Ratios, Averages, Allegations; Permutation & Combination, Probability; Data Interpretation, Bar Charts, Pie Charts, Line Graphs
- Logical Reasoning & English Comprehension:** Blood Relations, Coding-Decoding, Alphanumeric Series; Syllogisms, Inequalities; Puzzles, Seating Arrangements; Direction Sense, Clocks & Calendars; Analogy, Pattern Recognition; Verbal/English Ability: Vocabulary, Synonyms, Antonyms; Reading Comprehension; Grammar, Cloze Test; Idioms and Phrases.
- Computer Fundamentals:** Computer Hardware and Peripheral Devices; Software, Firmware, and Computer Organization; Well-Defined Operations, Operands, and Instruction Execution; Algorithms, Flowchart, Pseudocode, Program, Software and Apps; Programming Languages and its types; Types of Software: System, Application & End-User; Operating Systems: Windows Basics; Operating Systems: Functions, Facilities, and Types; Storage and Memory Hierarchy; File Systems and Concurrency; MS Excel; Data & Number Systems: Binary, decimal, hexadecimal conversions; Algorithms: Searching, Sorting algorithms; Basics of Computer Networks and Internet.
- Mathematics (NCERT, X-Level):** Number Systems, Coordinate Geometry, Linear Equations in Two Variables, Introduction to Euclid's Geometry: Lines and Angles, Triangles, Quadrilaterals; Areas of Parallelograms and Triangles; Real Numbers, Polynomials, Quadratic Equations; Arithmetic Progressions; Introduction to Trigonometry & Some Applications ; Circles and Areas Related to Circles; Surface Areas and Volumes; Probability and Statistics.
- Mathematics (NCERT, XII-Level):** Sets and Functions: Sets, Relations, Functions, and Trigonometric Functions; Algebra: Complex Numbers and Quadratic Equations, Linear Inequalities, Permutations and Combinations, Binomial Theorem, Sequences and Series; Coordinate Geometry: Straight Lines, Conic Sections, Calculus: Limits and Derivatives; Inverse Trigonometric Functions; Algebra: Matrices, Determinants; Calculus: Continuity and Differentiability, Applications of Derivatives, Integrals, Applications of Integrals, and Differential Equations; Vectors; and Probability.

OR

Molecular Biology: Concepts in Biology, Characteristics of living. Organisms, Structure of Cells, Energy flow. Nutrition & Metabolism; Information Storage and gene expression ; Central Dogma: DNA structure, replication (prokaryotic/eukaryotic), transcription, genetic code, translation, protein synthesis machinery; Gene Structure & Regulation: Gene concept, operons (lac, trp), positive/negative regulation, enhancers/silencers, epigenetics (methylation); Nucleic Acid & Protein Biology: DNA/RNA structure, protein folding, post-translational modifications, protein complexes, DNA repair mechanisms; Cell Biology Linkages: Cell cycle (mitosis), cell signaling, intracellular transport, cytoskeleton, prokaryotic vs. eukaryotic cell differences; Genetics: Mendelian genetics, genetic recombination, gene mapping, genetic disorders, Hardy-Weinberg.

NOTES:

- Eligible candidates may apply for multiple programs, with a priority number and prescribed fee.
- Merit lists shall be generated for each program separately, based on valid J-CAT scores.
- Candidates applying for M.Sc(Bioinformatics) program will attempt Molecular Biology component.


Head

विभागाध्यक्ष / Head

कंप्यूटर विज्ञान विभाग / Department of Computer Science

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