

Topics for Graduate (MS) Admission Test in Artificial Intelligence:

Area	Indicative Topics
Computing	1. Data Structures and Algorithms 2. Digital Logic Design 3. Machine Learning 4. Deep Learning 5. Generative AI
Mathematics	6. Linear Algebra 7. Calculus 8. Optimization 9. Statistics and Probability

Topics for Graduate (MS and PhD) Admission Test in Computer Science:

1. Programming
2. Object Oriented Programming
3. Data Structures and Algorithms
4. Design and Analysis of Algorithms
5. Discrete Structure
6. Digital Logic Design
7. Computer Organization and Assembly Language
8. Database Management
9. Software Project Management
10. Computer Networks
11. Operating Systems
12. Basics of AI and Machine Learning

Topics for Graduate (MS and PhD) Admission Test in Computer Engineering:

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| 1. Digital System Design | 6. Electronics |
| 2. Computer Architecture & Assembly Language | 7. Object Oriented Programming |
| 3. Digital Signal Processing | 8. Data Structure |
| 4. Circuit Analysis | 9. Basics of AI and Machine Learning |
| 5. Computer Networks | |

Topics for Graduate (MS and PhD) Admission Test in Chemical Engineering:

1. Chemical Engineering Thermodynamics
2. Fluid Mechanics
3. Mass Transfer
4. Heat Transfer
5. Reaction Engineering
6. Separation Processes
7. Instrumentation and Process Control

Topics for Graduate (MS and PhD) Admission Test in Civil Engineering:

1. Structural & Earthquake Engineering
2. Geotechnical Engineering
3. Water Resources & Environmental Engineering
4. Highways & Transportation Engineering
5. Construction Engineering & Management
6. Surveying, GIS, Remote Sensing & Geomatics
7. AI/ML, Computational Methods & Emerging Technologies in Civil Engineering

Topics for Graduate (MS and PhD) Admission Test in Electrical Engineering and Electronics Engineering:

1. Digital Logic Design
2. Circuit Analysis
3. Electronics
4. Probability
5. Signals and Systems
6. Control Systems

Topics for Graduate (MS and PhD) Admission Test in Engineering Sciences:

Applied Mathematics:

1. Calculus
2. Linear Algebra
3. Differential Equations (ODEs & PDEs)
4. Numerical Analysis
5. Probability and Statistics

Applied Physics:

1. Classical Mechanics,
2. Electricity & Magnetism, Quantum Mechanics,
3. Thermodynamics & Statistical Physics,
4. Mathematical Physics / Methods, Waves & Optics,
5. Solid-State / Condensed Matter Physics,
6. Nuclear & Particle Physics

Topics for Graduate Admission test for MS & PhD in Materials Engineering and MS in Nanotechnology and Materials Engineering:

1. Crystallography/Crystal Structure
2. Crystal Defects
3. XRD for crystal structure evaluation and phase identification
4. Diffusion, Mechanical Properties of Materials
5. Deformation and Fracture, and Failure Analysis
6. Materials Thermodynamics
7. Phase Equilibria
8. Heat Treatment
9. Joining/Welding
10. Processing of Metals and Additive Manufacturing/ 3D printing
11. Polymers, Ceramics and Composites
12. Corrosion and Protection
13. Materials Characterization Techniques
14. Optical, Electrical & Magnetic properties of materials
15. Nanomaterials and Nanotechnology,
16. Nanostructures and Devices
17. Materials for energy conversion and storage.

Topics for Graduate (MS and PhD) Admission Test in Mechanical Engineering:

1. Fluid Mechanics
2. Thermodynamics
3. Heat Transfer,
4. Vibration
5. Controls & Dynamics
6. Mechanics of Materials
7. Manufacturing and FEA

Topics for Graduate (MS) Admission Test in Engineering Management:

Area	Indicative Topics
Basic Mathematics	Arithmetic & percentages, ratios/proportion Algebra, linear & quadratic equations Basic statistics: mean, median, SD, probability Data interpretation (tables, graphs, charts)
Analytical / English	Reading comprehension Critical reasoning & logical deduction Sentence correction, grammar, vocabulary Data sufficiency / analytical puzzles
Operations & Supply Chain Management	Process & productivity concepts; quality & inventory basics Forecasting / scheduling (computation MCQs) Supply chain fundamentals & flows; logistics and procurement EOQ / inventory calculations (computation MCQs)
General Management & Economics	Management functions (POLC); project & organizational basics; decision-making Marketing mix (4Ps); customer value & segmentation Micro basics: demand/supply, elasticity; cost / break-even reasoning