# Entrance Examination: Ph. D. in Computer Science

Following are the broad areas under which the candidate appearing for Ph.D. entrance test will be examined. Topics covered in the books following each subject area, upto the postgraduate level comprises the syllabus for this test. Alternate books, references which cover the same topics may be used instead. Candidates are expected to have basic proficiency in programming. No specific programming language for the test is expected. Subjects:

1. Theory of Computing

Introduction to Algorithms, Cormen, Leiserson, Rivest, Klein, MIT Press.

Introduction to Automata theory, Languages and Computation**,** John E. Hopcroft**,** Rajeev Motwani**,** Jeffrey D. Ullman**,** Pearson Education

2. Operating Systems

Operating System Concepts, Avi Silberschatz, Peter Baer Galvin, Greg Gagne, John Wiley Publication.

The Design of UNIX Operating System, M. Bach, Pearson Education

3. Computer Architecture

Computer Architecture: A Quantitative Approach, J. Hennessy, D. Patterson, Pub. Morgan-Kaufman

Computer Organization and Design, J. Hennessey, D. Patterson, Elsevier India Private Limited

4. Databases

*Database Management Systems*. by *Raghu Ramakrishnan* and Johannes Gehrke, McGraw-Hill Higher Education

5. Networking

Computer Networks, A. Tanenbaum, Pearson Education

6. Programming Languages and Translators

Programming Languages: Concepts and Constructs, Ravi Sethi, Addison Wesley

Compilers: Principles, Techniques, and Tools, Alfred V. Aho, Monica S. Lam, Ravi Sethi, and Jeffrey D. Ullman, Pearson Education

Linker and Loaders, J. Levin, Morgan-Kaufman

System Software: An Introduction to Systems Programming, *Leland L. Beck, Pearson* Education

7. Computer Graphics

Computer Graphics: Principles and Practice in C, James D. Foley, Andries van Dam, Steven K. Feiner, John F. Hughes, Addison Wesley

8. Artificial Intelligence

Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig, Prentice Hall

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