Online Exam for Mumbai University PhD

LIVE

Complete Syllabus Discussion

RASHMI PRABHA

JOIN US ON |

- Negative marking - YES
- *SYLLABUS - Computer Science and Engineering*
- Data Structures

a) Advanced Sorting Methods

b) Algorithm Design Paradigms

c) Complexity of Algorithm

d) Depth-first and Breadth-first Algorithms

e) Kinetic Data Structures

- **Algorithms**

a) Asymptotic analysis
b) Asymptotic notation
c) Basic concepts of complexity classes
d) Connected components
e) Dynamic programming
f) Notions of space and time complexity
g) Tree and graph traversals
h) Worst and average case analysis
i) Computational Geometry
j) Growth of Functions
k) Heuristic Methods

- Computation Theory

a) Regular Languages and Finite Automata

b) Languages and Pushdown Automata

c) Recursively Enumerable sets and Turing Machines

- Operating Systems

1. Agreement Protocols for handling Processor Failures
2. Comparative Performance Analysis
3. Distributed Mutual Exclusion
4. Distributed Operating Systems
5. Local and Global states
6. Process Deadlocks
7. Resource Models
8. Synchronization Mechanisms
9. Coordination of Processes and related Algorithms
10. Failure Handling and Recovery Mechanisms
11. Multiprocessor Operating Systems and related Thread Handlings
12. Token and Non-token based Algorithms

- Database Systems

1. Database design
2. Indexing and Hashing
3. Relational model
4. Storage and File Structures
5. Extended Relational Model
6. Mobile Databases and Web-enabled Database Systems
7. Transactions and Concurrency control

- Computer Organization and Architecture

1. Cache and main memory
2. CPU control design
3. Design and synthesis of combinational and sequential circuits
4. Instruction pipelining
5. Machine instructions and addressing modes
6. Number representation and computer arithmetic
7. Secondary storage
8. Structured Memory Design for Parallel Systems

- Software Engineering

1. Team Software Process
2. Systems Modeling Language
3. Requirement and feasibility analysis
4. Process Models- Iterative
5. Planning and managing the project
6. Personal Software Process
7. Domain specific modeling
8. Software architecture and design patterns
9. Software reliability and Advanced testing techniques
10. Aspect oriented programming

- Computer Networks

1. LAN technologies
2. Application layer protocols
3. Flow and error control techniques
4. Introduction to intelligent networking
5. Performance analysis of networks

- In addition to these, candidates are advised to refer topics such as Compiler Design, Computer Graphics and Web technologies. Questions will be asked from the topics prescribed to MCA and M.Sc in Computer Science.

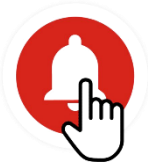
- Mathematical Techniques
- Linear Algebra • Calculus • Continuity and Differentiability • Mean value Theorems • Evaluation of Definite and Improper Integrals • Surface and Volume Integrals • Gauss and Green's Theorems

- Differential equations • Higher Order Linear Differential Equations with Constant Coefficients • Laplace and Fourier Transforms • Solutions of one Dimensional Diffusion • Wave Equations • Laplace Equation Complex variables • Cauchy's Integral Theorem • Residue Theorem • Analytic Functions • Taylor and Laurent Series

- Probability and Statistics • Definitions of Probability and Sampling Theorems • Normal and Binomial Distributions
- Numerical Methods • Finite Differences • Numerical Integration • Numerical Solutions of Linear and Non-Linear Algebraic Equations

FOLLOW US ON

- youTube
- http://www.youtube.com/c/CombineCSTheExtraStep
- Join Telegram for FREE mock test, notifications & Discussions
- https://t.me/RashmiCCS
- facebook
- https://www.facebook.com/RashmiPrabhaCCS/
- twitter
- https://twitter.com/RashmiP79493244
- instagram
- https://www.instagram.com/combinecs/



Thanks for watching

By: Rashmi Prabha