



# Must Study Topics in ALL Subjects



# SACHIN MITTAL

**IISc Bangalore**

Ex Amazon scientist ; GATE AIR 33



# DEEPAK POONIA

**IISc Bangalore**

**GATE AIR 53 ; 67 ; 206**



# Must Study Topics

# Computer Organization



## Section 3: Computer Organization and Architecture

Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining, pipeline hazards. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).



## Table of Contents

Table of Contents	1
Contributors	4
1 CO and Architecture (218)	5
1.1 Addressing Modes (18)	5
1.2 Assembly Code (1)	9
1.3 Cache Memory (66)	9
1.4 Cisc Risc Architecture (2)	24
1.5 Clock Frequency (2)	25
1.6 Conflict Misses (1)	25
1.7 Control Unit (1)	25
1.8 Data Dependency (2)	26
1.9 Data Path (6)	26
1.10 Direct Mapping (1)	29
1.11 Dma (7)	29
1.12 Dram (1)	30
1.13 leee Representation (1)	31

**Cache is 30 % of COA PYQs**

**Most IMPORTANT  
in ENTIRE GATE CSE**

Module: Cache Memory

Lecture 1 Introduction to Cache  
Direct Mapped Cache

Annotated Notes -1 Cache Memory  
Introduction and Direct Mapped  
Cache

Lecture 2- Questions on Direct  
Mapped Cache Memory

Annotated Notes -2 Questions on  
Direct Mapped Cache Memory

Lecture 3- Introduction to Set  
Associative Cache

Annotated Notes - Set Associative  
Memory

Lecture 4 Questions on Set  
Associative Cache Memory

Annotated Notes - Questions on Set  
Associative Memory and Fully  
Associative Memory

Lecture 5. Loop Array, and Cache  
Questions from Standard Universities

Annotated Notes Lecture 5- Loop,  
Array, and Cache Questions from  
Standard Universities

Lecture 6 GATE PYQs on Loop Array  
and Cache Questions

Annotated Notes Lecture 6- GATE  
PYQs on Loop Array, and Cache  
Questions

Lecture 7. GATE PYQs on Cache  
Memory Effective Access Time

Annotated Notes Lecture 7-  
Questions on Cache Effective Access  
Time

Lecture 8. Write Back and Write  
Through Policies

Computer Organisation GO Class

# ALL Practice Questions on Byte Ordering (Endian-ness)

Computer Organization and Architecture | GO Classes

GO Classes for GATE CS

Public

15 videos 331 views Updated yesterday

Play all Shuffle



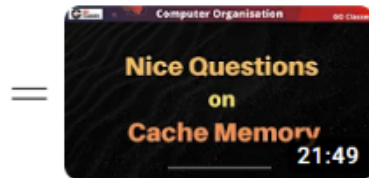
Many Questions on Direct Mapped Cache Memory From Standard Universities | With NOTES | COA

GO Classes for GATE CS • 432 views • 8 days ago



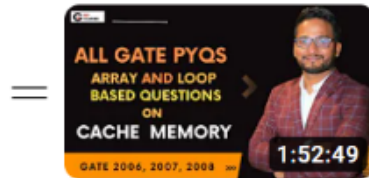
CMU, MIT Questions on Array and Loop based questions of Cache Memory | WITH NOTES

GO Classes for GATE CS • 543 views • 7 days ago



Standard Questions on Cache Memory | Direct Mapped | Set Associative | GO Classes | Deepak Sir

GO Classes for GATE CS • 362 views • 6 days ago



ALL GATE PYQs on Loop Array and Cache Questions | COA | WITH NOTES

GO Classes for GATE CS • 439 views • 4 days ago



Expanding Opcode Technique - ALL GATE PYQs | GATE CSE 2020, 2018, 1992, 1988 | Computer Architecture

GO Classes for GATE CS • 355 views • 6 days ago



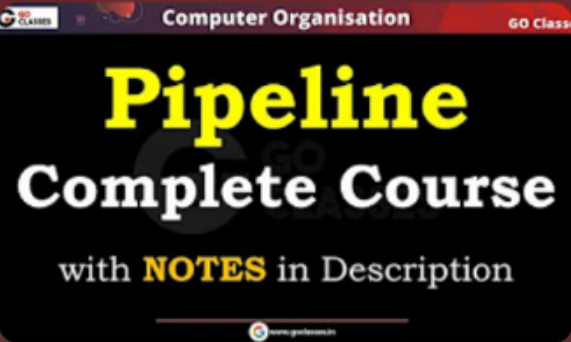
## Table of Contents

Table of Contents		1
Contributors		4
1 CO and Architecture (218)		5
1.1 Addressing Modes (18)	<b>18 Questions from</b>	5
1.2 Assembly Code (1)	<b>Addressing Modes</b>	9
1.3 Cache Memory (66)		9
1.4 Cisc Risc Architecture (2)		24
1.5 Clock Frequency (2)		25
1.6 Conflict Misses (1)		25
1.7 Control Unit (1)		25
1.8 Data Dependency (2)		26
1.9 Data Path (6)	<b>EASIEST topic of COA</b>	26
1.10 Direct Mapping (1)		29
1.11 Dma (7)		29
1.12 Dram (1)		30
1.13 leee Representation (1)		31

- 1.14 Instruction Execution (7)
- 1.15 Instruction Format (7)
- 1.16 Interrupts (8)
- 1.17 Io Handling (7)
- 1.18 Machine Instructions (19)
- 1.19 Memory Interfacing (3)
- 1.20 Memory Interleaving (1)
- 1.21 Microprogramming (12)
- 1.22 Pipelining (37)
- 1.23 Runtime Environment (2)
- 1.24 Speedup (2)
- 1.25 Stall (1)
- 1.26 Virtual Memory (3)

Answer Keys

## 37 Questions from Pipeline



**Pipeline Complete Course**  
with **NOTES** in Description

**Pipeline - Complete Playlist | Hazards in Pipeline |...**

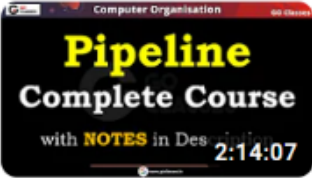
GO Classes for GATE CS

Public ▾

5 videos 2,174 views Last updated on Dec 6, 2023

🔗 ⬇️ ⋮

▶ Play all   🔄 Shuffle



**Pipeline Complete Course**  
with **NOTES** in Des 2:14:07

**Pipeline Lec 1 - Introduction to Pipeline | with NOTES | Pipeline Complete Course & GATE PYQs**


GO Classes for GATE CS • 2.3K views • 10 months ago



**Hazards are Coming...**  
Pipeline Haz 2:17:40

**Pipeline Lec 2 - Introduction to Data Hazards | with NOTES | Pipeline Complete Course & GATE PYQs**


GO Classes for GATE CS • 1.1K views • 10 months ago



**Data Dependency Vs Data Hazards**  
**NOTES** in Descri 1:20:02

**Pipeline Lec 3 - Data Hazards Vs Data Dependency | with NOTES | Pipeline Complete Course & GATE PYQs**

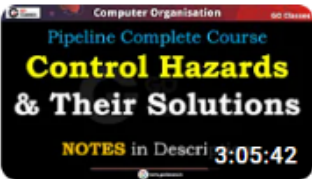
GO Classes for GATE CS • 1.2K views • 10 months ago



**Pipeline Complete Course Data Hazards Solutions**  
**NOTES** in Descri 2:31:52

**Pipeline Lec 4 - Handling Data Hazards | Stall & Forwarding | with NOTES | Pipeline Complete Course**

GO Classes for GATE CS • 1.2K views • 10 months ago



**Pipeline Complete Course Control Hazards & Their Solutions**  
**NOTES** in Descri 3:05:42

**Pipeline Lec 5 - Control Hazards | Branch Prediction | with NOTES | Pipeline Complete Course**

GO Classes for GATE CS • 1.2K views • 10 months ago



## 5.5 Disk Scheduling (14)

**Disk Scheduling is VERY EASY...**

**Study Notes & Solve ALL GATE  
PYQs.**



Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Cache	66 GATE PYQs out of 218	Easy to Moderate	NOOO.
Pipeline	37 GATE PYQs out of 218	Moderate to Hard	Yes. But GO Classes Playlist covers from Scratch.
Addressing Modes	18 GATE PYQs out of 218	Easiest	Yes. But Solve ALL GATE PYQs after going through Notes.
Disk Scheduling	14 GATE PYQs	Easiest	No. Study Notes & Solve GATE PYQs.



# Must Study Topics

# Operating Systems



## Section 8: Operating System

System calls, processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU and I/O scheduling. Memory management and virtual memory. File systems.

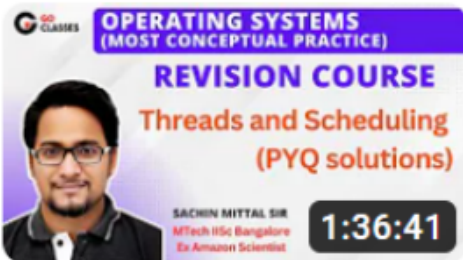


# Operating Systems:

## 1. Scheduling

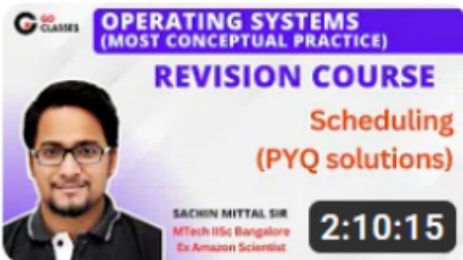
5.20 Process Scheduling (44)





## Threads & Scheduling | GATE PYQs | Most Conceptual Revision | Operating System

GO Classes for GATE CS • 1.8K views • Streamed 1 year ago



## Scheduling - GATE PYQs | Operating System Revision | GO Classes | Sachin Mittal

GO Classes for GATE CS • 1.4K views • Streamed 1 year ago





5.15 Page Replacement (29)



**Operating Systems GATE PYQs, Revision Playlist**

GO Classes for GATE CS

Public

10 videos 12,291 views Last updated on Jan 19,...

🔗 ⬇️ ⋮

▶ Play all 🔁 Shuffle

- Threads & Scheduling | GATE PYQs | Most Conceptual Revision | Operating System**

GO Classes for GATE CS • 1.8K views • Streamed 1 year ago
- Scheduling - GATE PYQs | Operating System Revision | GO Classes | Sachin Mittal**

GO Classes for GATE CS • 1.4K views • Streamed 1 year ago
- Process Synchronisation - GATE PYQs | Operating System Revision | GO Classes | Sachin Mittal**

GO Classes for GATE CS • 2K views • Streamed 1 year ago
- Process Synchronisation 2 (Semaphores) - GATE PYQs | Operating System Revision | Sachin Mittal**

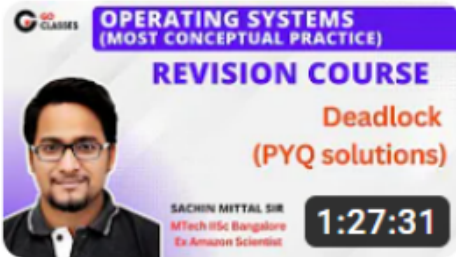
GO Classes for GATE CS • 1.5K views • Streamed 1 year ago
- Multi Level Paging - GATE PYQs | Operating System Revision | Sachin Mittal**

GO Classes for GATE CS • 4.5K views • Streamed 1 year ago



## 5.22 Resource Allocation (27)

## 5.2 Deadlock Prevention Avoidance Detection (4)



**GO CLASSES**  
**OPERATING SYSTEMS**  
(MOST CONCEPTUAL PRACTICE)  
**REVISION COURSE**  
**Deadlock**  
(PYQ solutions)  
SACHIN MITTAL SIR  
M.Tech IITc Bangalore  
Ex Amazon Scientist  
**1:27:31**

### Deadlock | Revision & GATE PYQs | Operating Systems Revision | GO Classes | Sachin Mittal

GO Classes for GATE CS • 1.1K views • Streamed 1 year ago



Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Scheduling	44 GATE PYQs	Easy	NOOO.
Page Replacement	29 GATE PYQs	Easy	No
Deadlock	31 GATE PYQs	Easy to Moderate	No.





# Must Study Topics

## Digital Logic



## Section 2: Digital Logic

Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point).



# Digital Logic:

GATE Overflow Book

## 4 Digital Logic (281)

4.1 8085 Microprocessor (1)

4.2 Adder (10)

4.3 Array Multiplier (2)

4.4 Binary Codes (2)

4.5 Boolean Algebra (31)

4.6 Booths Algorithm (6)

4.7 Canonical Normal Form (7)

4.8 Carry Generator (2)

4.9 Circuit Output (40)



**Digital Logic Boolean Algebra**

# Number of Boolean Functions GATE 1987

GATE CSE Complete Course



## Digital Logic : Boolean Algebra GATE PYQs | GAT...

GO Classes for GATE CS

Public ▾


17 videos 1,317 views Last updated on Oct 10, 2023





 Play all

 Shuffle

- 


=

Digital Logic Boolean Algebra

Number of Boolean Functions GATE 1987

GATE Complete 14:37

**GATE CSE 1987 | Number of Boolean Functions | Digital Logic | GO Classes | Deepak Poonia Sir**

GO Classes for GATE CS • 613 views • 2 years ago
- 


=

Digital Logic Boolean Algebra

(Exor)  $A \oplus B \oplus A$  GATE 1987

GATE Complete 4:36

**GATE CSE 1987 | Exor Expression | Boolean Algebra | Digital Logic | GO Classes | Deepak Poonia Sir**

GO Classes for GATE CS • 180 views • 2 years ago
- 


=

Digital Logic Boolean Algebra

Boolean Operation  $x*y = x'y'+xy$  GATE 1988

GATE Complete 4:08

**GATE CSE 1988 | Boolean Operation \* | Boolean Algebra | Digital Logic | GO Classes | Deepak Poonia**

GO Classes for GATE CS • 159 views • 2 years ago
- 


=

Digital Logic Boolean Algebra

Neutral Function GATE 1989

GATE Complete 10:44

**GATE CSE 1989 | Neutral Switching Function | Boolean Algebra | Digital | GO Classes | Deepak Poonia**

GO Classes for GATE CS • 293 views • 2 years ago
- 

=

Digital Logic Boolean Algebra

Simultaneous Boolean Equations GATE 1989

GATE Complete 4:40

**GATE CSE 1989 | Boolean Equations | Boolean Algebra | Digital Logic | GO Classes | Deepak Poonia**

GO Classes for GATE CS • 115 views • 2 years ago



# Digital Logic:

GATE Overflow Book

4.29 Number Representation (51)

4.30 Number System (2)



# Digital Logic:

## GATE Overflow Book

4.22 K Map (19)

4.23 Little Endian Big Endian (1)

4.24 Memory Interfacing (3)

4.25 Min No Gates (4)

4.26 Min Product Of Sums (2)

4.27 Min Sum Of Products Form (13)





# Digital Logic:

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Boolean Algebra	30	Easiest	No
Number System	50	Easy to Moderate	No
K map	20	Easy to Moderate	Boolean Alg



# Must Study Topics

# C Prog & Data Structures



## Section 4: Programming and Data Structures

Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.



## 3 Programming and DS: DS (218)

3.1 Abstract Data Type (1)

3.2 Array (13)

3.3 Avl Tree (3)

3.4 Binary Heap (4)

3.5 Binary Search Tree (32)

3.6 Binary Tree (51)

3.7 Data Structures (3)

3.8 Graph Search (1)

3.9 Hashing (15)

3.10 Heap (24)

3.11 Infix Prefix (5)

3.12 Linked List (22)

3.13 Priority Queue (2)

3.14 Queue (13)

3.15 Stack (15)

3.16 Tree (14)

Answer Keys



# C Prog & Data Structures

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Binary Trees	51	Easy to Moderate	Yes, better if knows basics of recursion.
Binary Search Trees	32	Easy to Moderate	Yes, better if knows basics of recursion.





# Must Study Topics

## Algorithms



## Section 5: Algorithms

Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph traversals, minimum spanning trees, shortest paths

# Table of Contents

## Contributors

### 1 Algorithms (308)

1.1 Algorithm Design (7)

1.2 Algorithm Design Techniques (9)

1.3 Asymptotic Notations (20)



1.20 Quick Sort (4)

1.21 Recurrence Relation (33)

1.22 Recursion (4)

1.23 Searching (6)

1.24 Sorting (35)

1.25 Space Complexity (1)

1.26 Spanning Tree (29)

1.27 Time Complexity (28)

1.28 Uniform Hashing (1)

Answer Keys

**GO CLASSES**  
Revision & Practice

# ASYMPTOTIC NOTATIONS

$O()$ ,  $o()$ ,  $\Omega()$ ,  $\omega()$ , and  $\Theta()$

## Data Structures and Algorithms Mix

GO Classes for GATE CS

Public ▾

8 videos 1,562 views Updated today

🔗 ⬇️ ⋮

☰ Sort



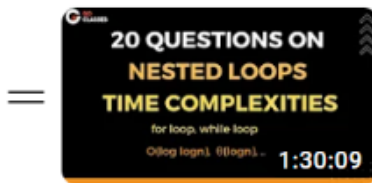
Asymptotic Notations in Algorithms ALL GATE PYQs| Revision & Practice|  $O()$ ,  $o()$ ,  $\Omega()$ ,  $\omega()$ |With NOTES

GO Classes for GATE CS • 1.8K views • Streamed 8 days ago



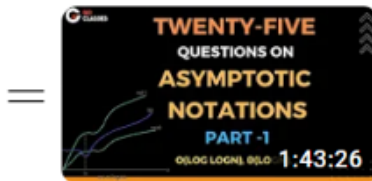
55 Fifty-Five Questions on Recurrence Relations | Solving Recurrence Relations with ALL GATE PYQs

GO Classes for GATE CS • 1.4K views • Streamed 5 days ago



20 Loop Time Complexity Questions with Many Variations | Nested loops | Sachin Mittal sir

GO Classes for GATE CS • 5.2K views • 5 months ago



25 Questions on Asymptotic Notation | Big-O Omega Theta with Many Variations | Sachin Mittal sir

GO Classes for GATE CS • 1.3K views • 5 months ago

1.20 Quick Sort (4)

1.21 Recurrence Relation (33)

1.22 Recursion (4)

1.23 Searching (6)

1.24 Sorting (35)

1.25 Space Complexity (1)

1.26 Spanning Tree (29)

1.27 Time Complexity (28)

1.28 Uniform Hashing (1)

Answer Keys

**Algorithms - GATE PYQs Complete Analysis - Algo...**

GO Classes for GATE CS

Public

11 videos 7,384 views Updated 6 days ago

🔗 ⬇️ ⋮

▶ Play all

🔄 Shuffle

**Algo -1 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph traversals | Sachin Mittal**

GO Classes for GATE CS • 3.5K views • Streamed 1 year ago

**Algo -1 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph traversals | Sachin Mittal**

GO Classes for GATE CS • 3.5K views • Streamed 1 year ago

**Algo -2 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 1.2K views • Streamed 1 year ago

**Algo -2 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 1.2K views • Streamed 1 year ago

**Algo -3 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 221 views • Streamed 1 year ago

**Algo -3 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 221 views • Streamed 1 year ago

**Algo -3 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 876 views • Streamed 1 year ago

**Algo -3 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 876 views • Streamed 1 year ago

**Algo -4 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 1.1K views • Streamed 1 year ago

**Algo -4 - Depth First Search DFS - GATE PYQs Complete Analysis | Graph Traversals | Sachin Mittal**

GO Classes for GATE CS • 1.1K views • Streamed 1 year ago



# Algorithms

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Asymptotic Notations	80	Easy to Moderate	No
Recurrence Relations			
Loop Time Complexity			
Sorting (Specially merge and Quick) and Searching	40	Easy to Moderate	No



# Must Study Topics

# Theory of Computation



## Section 6: Theory of Computation

Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.

## 5 Theory of Computation (279)

5.1 Ambiguous Grammar (1)

5.2 Closure Property (8)

5.3 Context Free Grammar (1)

5.4 Context Free Language (31)

5.5 Countable Uncountable Set (3)

5.6 Decidability (28)

5.7 Finite Automata (41)

5.8 Grammar (2)

5.9 Identify Class Language (30)

5.10 Minimal State Automata (25)

5.11 Non Determinism (6)

5.12 P Np Npc Nph (5)

5.13 Pumping Lemma (2)

5.14 Pushdown Automata (15)

5.15 Recursive And Recursively Enumerable Languages (13)

5.16 Reduction (2)

5.17 Regular Expression (27)



# Theory of computation

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Finite Automata Regular Expressions	90	Easy to Moderate	No



# Must Study Topics

# DBMS





## Section 9: Databases

ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.

## 3 Databases (251)

3.1 B Tree (28)

3.2 Candidate Key (5)

3.3 Conflict Serializable (4)

3.4 Data Independence (1)

3.5 Database Normalization (51)

3.6 Er Diagram (10)

3.7 Indexing (12)

3.8 Joins (7)

3.9 Multivalued Dependency 4nf (1)

3.10 Natural Join (3)

3.11 Referential Integrity (4)

3.12 Relational Algebra (27)

3.13 Relational Calculus (14)

3.14 Relational Model (1)

3.15 Safe Query (1)

3.16 Sql (53)

3.17 Timestamp Ordering (1)

3.18 Transaction And Concurrency (28)

Answer Keys



**DBMS : Normalization Complete Course | Normal...**

GO Classes for GATE CS

Public

17 videos 5,417 views Updated today

Play all Shuffle

DATABASE MANAGEMENT SYSTEM

**2NF**

2nd Normal Form

DEEPAK POONIA SIR 1:21:14

Normalization Lecture 6B - 1NF, 2NF | Second Normal Form | Partial Dependency | DBMS | Deepak Poonia

GO Classes for GATE CS • 147 views • 1 month ago

DATABASE MANAGEMENT SYSTEM

**3NF**

3rd Normal Form

DEEPAK POONIA SIR 33:01

Normalization Lecture 6C - 3NF | Third Normal Form | Transitive Dependency | DBMS | Deepak Poonia

GO Classes for GATE CS • 84 views • 1 month ago

DATABASE MANAGEMENT SYSTEM

**Practice Questions**

3rd Normal Form(3NF)

DEEPAK POONIA SIR 29:32

Normalization Lecture 6D - Practice Questions - 3NF | Third Normal Form | DBMS | Deepak Poonia

GO Classes for GATE CS • 61 views • 1 month ago

DATABASE MANAGEMENT SYSTEM

**BCNF**

Normal Form

DEEPAK POONIA SIR 14:17

Normalization Lecture 6E - BCNF | Boyce Codd Normal Form | DBMS | Deepak Poonia

GO Classes for GATE CS • 45 views • 1 month ago

DATABASE MANAGEMENT SYSTEM

**GATE IT 2005**

Normalization Que.

1NF, 2NF, 3NF

DEEPAK POONIA SIR 5:11

GATE IT 2005 Normalization Question | 1NF, 2NF, 3NF | Functional Dependency | DBMS | Deepak Poonia

GO Classes for GATE CS • 495 views • 1 month ago



# Database Management System (DBMS)

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Relational Algebra	27	Moderate	NO
Normalization	55 PYQs	Easy-Moderate	NO



# Must Study Topics

# Engineering Mathematics



**Linear Algebra:** Matrices, determinants, system of linear equations, eigenvalues and eigenvectors, LU decomposition.

**Calculus:** Limits, continuity and differentiability. Maxima and minima. Mean value theorem. Integration.

**Probability and Statistics:** Random variables. Uniform, normal, exponential, poisson and binomial distributions. Mean, median, mode and standard deviation. Conditional probability and Bayes theorem.



7 Engineering Mathematics: Probability (76)	135
7.1 Binomial Distribution (6)	140
7.2 Conditional Probability (13)	141
7.3 Continuous Distribution (1)	144
7.4 Expectation (7)	145
7.5 Exponential Distribution (1)	147
7.6 Independent Events (4)	147
7.7 Normal Distribution (2)	148
7.8 Poisson Distribution (4)	148
7.9 Probability Density Function (1)	149
7.10 Random Variable (8)	149
7.11 Uniform Distribution (7)	151
Answer Keys	153

The video thumbnail features a blue background with a white and yellow logo in the top left corner that reads 'GATE OVERFLOW'. The main title 'Probability Revision By GATE PYQs' is displayed in large, bold, yellow and pink text. Below the title, it says 'ALL Type of Questions, Tree Method Solution' in yellow. In the bottom left corner, there is a logo for 'GO CLASSES'. A black box in the bottom right corner shows the video duration '2:13:37'.

Probability Revision with GATE PYQs  
2.5K views • Streamed 1 year ago

GO Classes for GATE CS

Probability Revision with GATE PYQs Visit GO Classes Website  
Classes ...



6 Engineering Mathematics: Linear Algebra (80)	111
6.1 Cartesian Coordinates (1)	111
6.2 Determinant (7)	111
6.3 Eigen Value (28)	113
6.4 Matrix (23)	121
6.5 Memorybased Gatecse2023 (1)	127
6.6 Rank Of Matrix (3)	127
6.7 System Of Equations (13)	128



5 Engineering Mathematics: Calculus (47)	99
5.1 Continuity (8)	99
5.2 Definite Integral (1)	101
5.3 Differentiation (5)	101
5.4 Integration (10)	102
5.5 Limits (11)	105
5.6 Maxima Minima (10)	107
5.7 Polynomials (2)	109
Answer Keys	109

**3 GATE OVERFLOW** Calculus Engineering Maths  
**Limits**  
Complete Lecture  
**GO CLASSES**

**Calculus Complete Playlist | Engineering Mathematics**

GO Classes for GATE CS  
Public ▾  
12 videos 19,649 views Last updated on Oct 4, 2023

🔗 ⬇️ ⋮

▶ Play all 🔁 Shuffle

**3 GATE OVERFLOW** Calculus Engineering Maths  
**Limits**  
Complete Lecture 50:05  
**GO CLASSES**

Limits in Calculus | Calculus | Engineering Mathematics | GATE | GO Classes | GATE Overflow

GO Classes for GATE CS • 8.5K views • 1 year ago

**3 GATE OVERFLOW** Calculus Engineering Maths  
**Continuity**  
Complete Lecture 12:07  
**GO CLASSES**

Continuity in Calculus | Calculus | Engineering Mathematics | GATE | GO Classes | GATE Overflow

GO Classes for GATE CS • 2.9K views • 1 year ago

**3 GATE OVERFLOW** Calculus Engineering Maths  
**Differentiability**  
Complete Lecture 16:49  
**GO CLASSES**

Differentiability in Calculus | Calculus | Engineering Mathematics | GATE | GO Classes

GO Classes for GATE CS • 2.2K views • 1 year ago

**3 GATE OVERFLOW** Calculus Engineering Maths  
**Maxima Minima**  
Complete Lecture 28:15  
**GO CLASSES**

Maxima Minima in Calculus | Calculus | Engineering Mathematics | GATE | GO Classes

GO Classes for GATE CS • 2.4K views • 1 year ago

**3 GATE OVERFLOW** Calculus Engineering Maths  
**Intermediate Value Theorem**  
GATE Questions Answered 17:57  
**GO CLASSES**

Intermediate Value Theorem | Calculus | Engineering Mathematics | GATE Computer Science

GO Classes for GATE CS • 2.3K views • 1 year ago



# Engineering Mathematics

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Probability Topics Before Distributions (Specially Byes Theorem/ Conditional Probability)	15	Easy to Moderate	No
Linear Algebra Finding the Determinant Type of Matrices	20	Easy	No
Calculus Complete	45	Easy to Moderate	No



# Must Study Topics

# Discrete Mathematics



**Discrete Mathematics:** Propositional and first order logic. Sets, relations, functions, partial orders and lattices. Monoids, Groups. Graphs: connectivity, matching, coloring. Combinatorics: counting, recurrence relations, generating functions.



### 3 Discrete Mathematics: Mathematical Logic (74)

3.1 First Order Logic (33)

3.2 Logical Reasoning (3)

3.3 Propositional Logic (38)

Answer Keys

37

37

46

47

57



**DISCRETE MATHEMATICS (MOST CONCEPTUAL PRACTICE)**

**REVISION COURSE (PROPOSITIONAL LOGIC) PYQ SOLUTIONS**

**LIVE** 06 December 2022

DEEPAK POONIA SIR  
M.Tech IISc Bangalore

**7 PM - 9 PM**

**Discrete Mathematics GATE PYQs, Revision Playlist**

GO Classes for GATE CS

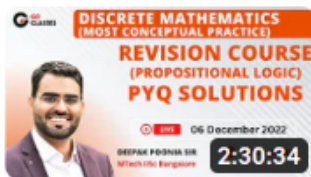
Public

13 videos 9,749 views Last updated on Jan 1, 2023

🔗 ⬇️ ⋮

▶ Play all

🔀 Shuffle



Propositional Logic - GATE PYQs Part 1 | Discrete Mathematics Revision | GO Classes | Deepak Poonia

GO Classes for GATE CS • 5K views • 1 year ago



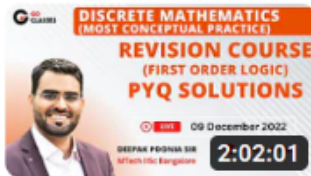
Propositional Logic - GATE PYQs Part 2 | Discrete Mathematics Revision | GO Classes | Deepak Poonia

GO Classes for GATE CS • 1.4K views • Streamed 1 year ago



First order Logic - Complete Summary | Discrete Mathematics Revision | GO Classes | Deepak Poonia

GO Classes for GATE CS • 1.6K views • Streamed 1 year ago



First order Logic - GATE PYQs Part 1 | Discrete Mathematics Revision | GO Classes | Deepak Poonia

GO Classes for GATE CS • 1.7K views • Streamed 1 year ago

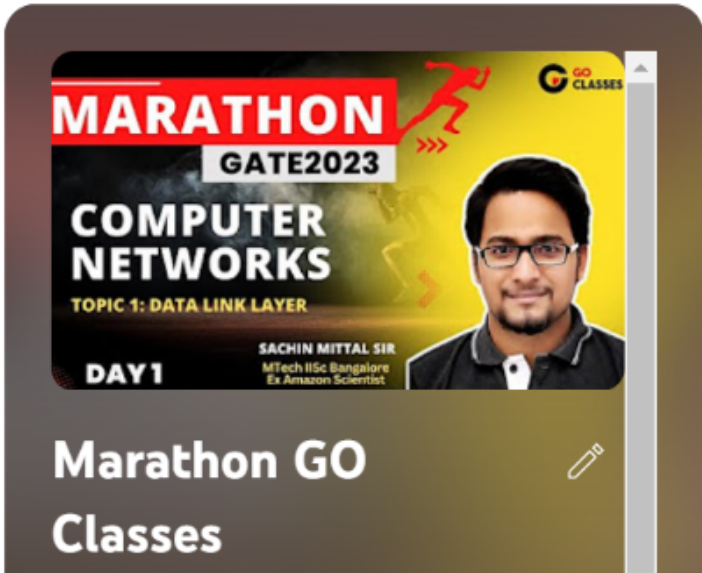


First order Logic - GATE PYQs Part 2 | Discrete Mathematics Revision | GO Classes | Deepak Poonia

GO Classes for GATE CS • 1.2K views • Streamed 1 year ago



2 Discrete Mathematics: Graph Theory (75)	18
2.1 Counting (4)	18
2.2 Degree Of Graph (12)	18
2.3 Graph Coloring (9)	21
2.4 Graph Connectivity (35)	23
2.5 Graph Matching (1)	31
2.6 Graph Planarity (13)	32
2.7 Hard (1)	35
Answer Keys	35



=



Marathon Series : Graph Theory Revision & GATE PYQs | Discrete Maths | GATE CSE 2023 | Deepak Poonia

GO Classes for GATE CS • 3.4K views • Streamed 11 months ago

=



Marathon Series : Graph Theory Revision & GATE PYQs Part 2 | GATE CSE 2023 | Deepak Poonia

GO Classes for GATE CS • 2K views • Streamed 11 months ago

=



Marathon Series : Graph Theory Revision & GATE PYQs Part 3 | GATE CSE 2023 | Deepak Poonia

GO Classes for GATE CS • 1.4K views • Streamed 11 months ago



4 Discrete Mathematics: Set Theory & Algebra (164)	58
4.1 Binary Operation (8)	58
4.2 Countable Uncountable Set (2)	60
4.3 Equivalence Class (1)	61
4.4 Functions (27)	61
4.5 Group Theory (31)	67
4.6 Lattice (9)	74
4.7 Mathematical Induction (2)	77
4.8 Number Theory (7)	78
4.9 Partial Order (10)	79
4.10 Polynomials (4)	82
4.11 Relations (36)	83
4.12 Set Theory (27)	91
Answer Keys	97

All

Shorts

Videos

Unwatched

Watched

Recently uploaded

Live

Playlists

Filters



# DISCRETE MATHEMATICS (MOST CONCEPTUAL PRACTICE)

## REVISION COURSE (SET THEORY-SET SUMMARY) PYQ SOLUTIONS



LIVE

16 December 2022

DEEPAK POONIA SIR  
MTech IISc Bangalore



7 PM - 9 PM

2:43:20

Set - Revision & GATE PYQs- Set Theory | Discrete Mathematics Revision  
| GO Classes | Deepak Poonia

1.4K views • Streamed 1 year ago



GO Classes for GATE CS

Feel free to contact us for any query. GO Classes Contact : (+91)63025 36274 (+91)9468930964 GO Classes M



# Discrete Mathematics

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Propositional Logic	74		
Graph Theory Degree of the graph, Graph Coloring	20		
Set Theory Basic of set theory like venn diagram	25	Group Theory Basics Only (2-4 Hours, Easy)	



# Must Study Topics

# Computer Network



## Section 10: Computer Networks

Concept of layering: OSI and TCP/IP Protocol Stacks; Basics of packet, circuit and virtual circuit-switching; Data link layer: framing, error detection, Medium Access Control, Ethernet bridging; Routing protocols: shortest path, flooding, distance vector and link state routing; Fragmentation and IP addressing, IPv4, CIDR notation, Basics of IP support protocols (ARP, DHCP, ICMP), Network Address Translation (NAT); Transport layer: flow control and congestion control, UDP, TCP, sockets; Application layer protocols: DNS, SMTP, HTTP, FTP, Email.



2.13 Ip Address (1)

2.14 Ip Addressing (8)

2.30 Subnetting (20)





2.27 Sliding Window (15)

---

2.29 Stop And Wait (6)





# Marathon GO Classes

GO Classes for GATE CS

Public

26 videos 14,267 views Last updated on Dec 14,...



**Marathon Series : Computer Networks | Topic 1: Data Link Layer (Stop-Wait and Sliding Window)**

GO Classes for GATE CS • 7.7K views • Streamed 11 months ago



**Marathon Series : Computer Networks | Topic 2: Error Control (Hamming Code, CRC) and IP addressing.**

GO Classes for GATE CS • 2.5K views • Streamed 11 months ago



**Marathon: CN | Topic 3: (Subnetting, Supernetting, Distance Vector Routing, and Link State Routing)**

GO Classes for GATE CS • 2.5K views • Streamed 11 months ago



**Marathon Series : CN | Topic 4: Transport Layer (UDP, TCP Flow, Error and Congestion Control)**

GO Classes for GATE CS • 2.4K views • Streamed 11 months ago



2.5 Crc Polynomial (4)

2.6 Cdma Cd (5)

2.7 Distance Vector Routing (8)

2.8 Error Detection (8)

CLASSES



# Computer Networks

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Subnetting and Supernetting	30	Easy to Moderate	No
Flow Control Methods Stop and Wait, Sliding Window (GBN and Selective Repeat)	20	Moderate to Tough	No
CRC and Formulas of Hamming Error Detection	12	Easy to Moderate	No



# Must Study Topics

# Compiler Design



## Section 7: Compiler Design

Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation. Local optimisation, Data flow analyses: constant propagation, liveness analysis, common sub expression elimination.



2.17 Lr Parser (4)

2.18 Macros (4)

2.19 Operator Precedence (1)

2.20 Parameter Passing (14)

2.21 Parsing (41)



# Compiler Design

Topic Name	Number of GATE PYQs	Difficulty Level	Any Pre-requisite
Parsing Do Top Down parser (First Follow, LL(1)) and If Time then do bottomup also	45	Easy to Moderate	No



# Must Study Topics

# Aptitude

## 8 General Aptitude: Analytical Aptitude (96)

- 8.1 Age Relation (1)
- 8.2 Code Words (5)
- 8.3 Direction Sense (10)
- 8.4 Family Relationship (4)
- 8.5 Logical Reasoning (33)
- 8.6 Number Relations (1)
- 8.7 Odd One (5)
- 8.8 Passage Reading (3)
- 8.9 Round Table Arrangement (4)
- 8.10 Seating Arrangements (2)
- 8.11 Sequence Series (9)
- 8.12 Statements Follow (19)

Answer Keys

## 9 General Aptitude: Quantitative Aptitude (376)

- 9.1 Absolute Value (6)
- 9.2 Age Relation (2)
- 9.3 Algebra (5)
- 9.4 Area (5)
- 9.5 Arithmetic Series (7)

Link in Description

5-10 q. Per Day

## 10 General Aptitude: Spatial Aptitude (16)

- 10.1 Assembling Pieces (2)
- 10.2 Mirror Image (2)
- 10.3 Paper Folding (5)
- 10.4 Patterns In Two Dimensions (4)
- 10.5 Rotation (1)
- 10.6 Three Dimensional Figure (1)
- 10.7 Transformation Of Figure (1)

Answer Keys

## 11 General Aptitude: Verbal Aptitude (320)

- 11.1 Closest Word (3)
- 11.2 Comparative Forms (1)
- 11.3 English Grammar (40)
- 11.4 Grammatical Error (6)
- 11.5 Meaning (35)
- 11.6 Most Appropriate Alternative (4)
- 11.7 Most Appropriate Word (83)
- 11.8 Noun Verb Adjective (2)
- 11.9 Opposite (5)
- 11.10 Passage Reading (46)



# BIG Announcement:

All India Mock Test

(AIMT)

more details  
soon

30<sup>th</sup> December (9:30 AM)





AIMT  $\equiv$  GATE CSE

Paper Pattern

Well framed, Good Quality Q.

IDEED SOLUTIONS

Given.

Detailed



AIMT with Video Solution  
Datailes

30<sup>th</sup> Dec

( 9:30 Am - 12:30  
Pm )

Saturday


3 Hours

# GoClasses + GateOverflow

20 mock tests (full length)

Link  
in  
Description

Package you  
can Enroll



**MARATHON**  
GATE2023

**COMPUTER NETWORKS**

TOPIC 1: DATA LINK LAYER

DAY 1

SACHIN MITTAL SIR  
M.Tech IISc Bangalore  
Ex. Amazon Scientist

**Marathon GO**  
**Classes**

GO Classes for GATE CS

Public

26 videos 14,267 views Last updated on Dec 14,...

🔗 ⬇️ ⋮



Marathon Series : Computer Networks | Topic 1: Data Link Layer (Stop-Wait and Sliding Window)

GO Classes for GATE CS • 7.7K views • Streamed 11 months ago



Marathon Series : Computer Networks | Topic 2: Error Control (Hamming Code, CRC) and IP addressing.

GO Classes for GATE CS • 2.5K views • Streamed 11 months ago



Marathon: CN | Topic 3: (Subnetting, Supernetting, Distance Vector Routing, and Link State Routing)

GO Classes for GATE CS • 2.5K views • Streamed 11 months ago



Marathon Series : CN | Topic 4: Transport Layer (UDP, TCP Flow, Error and Congestion Control)

GO Classes for GATE CS • 2.4K views • Streamed 11 months ago



Marathon Series : Graph Theory Revision & GATE PYQs | Discrete Maths | GATE CSE 2023 | Deepak Poonia

GO Classes for GATE CS • 3.4K views • Streamed 11 months ago