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## COMPUTER SCIENCE & INFORMATION TECHNOLOGY

Starting Time: 9 PM for Minor, 5 PM for Major.

## Syllabus and Schedule - All India Online Gate Test Series – 2018

	<b>Test Date</b>	Test Type	Syllabus	No. of Question	Marks	Duration
1	Feb 26, 2017	Minor T4	General Aptitude (Language and Analytical Skills)	30	120	90 min
2	Mar 5 , 2017	Minor T5	Computer Organization and Architecture Part-I: Machine instructions and addressing modes. ALU, data-path and control unit	30	120	90 min
3	Mar 12, 2017	Minor T6	Computer Organization and Architecture Part-II: Instruction pipelining. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).	30	120	90 min
4	Mar 19, 2017	Minor T7	Theory of Computation: Regular expressions and finite automata. Context-free grammars and pushdown automata. Regular and context-free languages, pumping	30	120	90 min

			lemma. Turing machines			
			and undecidability.			
5	Mar 26, 2017	Minor T8	Algorithms: Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divideand-conquer. Graph search, minimum spanning trees, shortest paths.	30	120	90 min
6	Apr 22, 2017	Minor T9	Digital Logic: Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point).	30	120	90 min
7	Apr 9 , 2017	Minor T10	Linear Algebra: Matrices, determinants, system of linear equations, eigenvalues and eigenvectors, LU decomposition.  Set Theory & Algebra: Sets; Relations; Functions; Groups; Partial Orders; Lattice.	30	120	90 min
8	Apr 16, 2017	Minor T11	Programming and Data Structures: Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.	30	120	90 min
9	Jun 4 , 2017	Minor T12	Calculus: Limits, continuity and differentiability.  Maxima and minima.  Mean value theorem.  Integration	30	120	90 min
10	Jun 11 , 2017	Minor T13	General Aptitude (Language and Analytical Skills)	30	120	90 min

11	Jun 18, 2017	Minor T14	Compiler Design: Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.	30	120	90 min
12	Jun 25 , 2017	Minor T15	Operating System Part-I: Processes, threads, interprocess communication, concurrency and synchronization, Deadlock, CPU scheduling.	30	120	90 min
13	Jul 2 ,2017	Minor T16	Operating System Part-II: Memory management and virtual memory, File systems.	30	120	90 min
14	Jul 9 ,2017	Minor T17	Mathematical Logic: Propositional Logic; First Order Logic. Graph Theory: Connectivity;; Matching; Coloring. Combinatory: Counting; Generating functions; Recurrence relations.	30	120	90 min
15	Jul 16 ,2017	Minor T18	Databases Part-I: ER- model. Relational model: relational algebra, tuple calculus, SQL.	30	120	90 min
16	Jul 23 ,2017	Minor T19	Databases Part-II: Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.	30	120	90 min
17	Jul 30 ,2017	Minor T20	General Aptitude (Language and Analytical Skills)	30	120	90 min
18	Aug 6, 2017	Minor T21	Computer Networks Part-I: Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms	30	120	90 min

			(distance vector, link state). TCP/UDP and sockets, congestion control.			
19	Aug 13. 2017	Minor T22	Computer Networks Part- II: Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls.	30	120	90 min
20	Aug 20, 2017	Minor T23	Probability: Random variables. Uniform, normal, exponential, Poisson and binomial distributions.  Mean, median, mode and standard deviation.  Conditional probability and Bayes theorem.	30	120	90 min
21	Sep 10, 2017	Major T24	FULL SYLLABUS	60	240	180 min
22	Oct 15, 2017	Major T25	FULL SYLLABUS	60	240	180 min
23	Nov 12, 2017	Major T26	FULL SYLLABUS	60	240	180 min
24	Dec 17, 2017	Major T27	FULL SYLLABUS	60	240	180 min
25	Jan 14, 2018	Major T28	FULL SYLLABUS	60	240	180 min

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