

Section 1: Engineering Mathematics

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

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

Computer Science and Information Technology

Section 2: Digital Logic

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

Section 3: Computer Organization and Architecture

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

Section 4: Programming and Data Structures

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

Section 5: Algorithms

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

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.

Section 7: Compiler Design

Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.

Section 8: Operating System

Processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.

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.

Section 10: Computer Networks

Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. 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.

TEST DATE:-30/12/2018

Proposed Test Center Cities for CBT 2018-19					
S.No	City	State Name	S.No	City	State Name
1	VISAKHAPATNAM	Andhra Pradesh	46	NAGPUR	MAHARASHTRA
2	Guwahati	ASSAM	47	NAVI MUMBAI	MAHARASHTRA
3	BEGUSARAI	BIHAR	48	THANE	MAHARASHTRA
4	BIHARSHARIF	BIHAR	49	PUNE	MAHARASHTRA
5	MADHEPURA	BIHAR	50	AMRAVATI	MAHARASHTRA
6	MADHUBANI	BIHAR	51	MIRAJ	MAHARASHTRA
7	MOTIHARI	BIHAR	52	NASHIK	MAHARASHTRA
8	SAMASTIPUR	BIHAR	53	SOLAPUR	MAHARASHTRA
9	BHAGALPUR	BIHAR	54	Bhubaneswar	ODISHA
10	Darbhangha	BIHAR	55	PATHANKOT	PUNJAB
11	GAYA	BIHAR	56	Bathinda	PUNJAB
12	Muzaffarpur	BIHAR	57	JHUNJHUNU	RAJASTHAN
13	PATNA	BIHAR	58	SRIGANGANAGAR	RAJASTHAN
14	PURNIA	BIHAR	59	AJMER	RAJASTHAN
15	Bhilai	CHHATISGARH	60	ALWAR	RAJASTHAN
16	Bilaspur	CHHATISGARH	61	BHARATPUR	RAJASTHAN
17	Raipur	CHHATISGARH	62	BHILWARA	RAJASTHAN
18	Chandigarh	CHANDIGARH	63	BIKANER	RAJASTHAN
19	New Delhi	DELHI	64	JAIPUR	RAJASTHAN
20	Ahmedabad	GUJARAT	65	JODHPUR	RAJASTHAN
21	Rajkot	GUJARAT	66	KOTA	RAJASTHAN
22	Surat	GUJARAT	67	SIKAR	RAJASTHAN
23	Vadodara	GUJARAT	68	UDAIPUR	RAJASTHAN
24	GURUGRAM	HARYANA	69	Chennai	TAMIL NADU
25	YAMUNANAGAR	HARYANA	70	Hyderabad	TELANGANA
26	Narnaul	HARYANA	71	BASTI	UTTAR PRADESH
27	FARIDABAD	HARYANA	72	MATHURA	UTTAR PRADESH
28	Rohtak	HARYANA	73	AGRA	UTTAR PRADESH
29	Ranchi -Doranda	JHARKHAND	74	ALIGARH	UTTAR PRADESH
30	DHANBAD	JHARKHAND	75	ALLAHABAD	UTTAR PRADESH
31	Bokaro	JHARKHAND	76	BAREILLY	UTTAR PRADESH
32	Jamshedpur	JHARKHAND	77	GORAKHPUR	UTTAR PRADESH
33	Bangaluru	KARNATAKA	78	JHANSI	UTTAR PRADESH
34	Bhopal	MADHYA PRADESH	79	KANPUR	UTTAR PRADESH
35	GWALIOR	MADHYA PRADESH	80	LUCKNOW	UTTAR PRADESH
36	Jabalpur	MADHYA PRADESH	81	MEERUT	UTTAR PRADESH
37	Indore	MADHYA PRADESH	82	VARANASI	UTTAR PRADESH
38	SATNA	MADHYA PRADESH	83	Dehradun	UTTARAKHAND
39	AKOLA	MAHARASHTRA	84	DURGAPUR	WEST BENGAL
40	AURANGABAD	MAHARASHTRA	85	KOLKATA	WEST BENGAL
41	DHULE	MAHARASHTRA	86	SILIGURI	WEST BENGAL
42	JALGAON	MAHARASHTRA	87	HOWRAH	WEST BENGAL
43	LATUR	MAHARASHTRA	88	KHARAGPUR	WEST BENGAL
44	MUMBAI - ANDHERI (E)	MAHARASHTRA	89	AGARTALA	TRIPURA
45	MUMBAI-DADAR	MAHARASHTRA	90	MYSURU	KARNATAKA
			91	KOTTAYAM	KERALA