SARDAR VALLBHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT.
DEPARTMENT OF COMPUTER SCIENCE AND ENGINERING

List of Eligible Candidates for M. Tech. Programme (under ICCR scheme) July – 2024

→ The following candidates are requested to appear for M. Tech. written test process online on **22/07/2024 at 10.00 AM. (Please visit institute website for any instructions update. The written test process is online. The Google classroom link will be communicated on your email-id.)**

Sr. No.	Name of the Candidate
1.	SHOVIK GHOSH (CONDITIONALLY)
2.	PARAM JYOTI CHOWDHURY
3.	SHATI BISWAS
4.	BIRAT CHAPGAIN
5.	TRINOY SAHA

08/07/2024

PG In-charge, DoCSE

Date: 08/07/2024

9/7/24

Head, DoCSE
विभागाध्यक्ष /Head
संगणक विज्ञान एवं अभियांत्रिकी विभाग
Department of Computer Science and Engineering

Cc. to: (1) Dean (Acad.) (2) Dy. Registrar (Acad.) (3) Prof. I/C CCC for uploading the same on Institute web site.

1. Engineering Mathematics:
Discrete Mathematics: Propositional and first-order logic sets, relations, functions, partial orders and lattices, Groups, Graphs: connectivity, matching, coloring.

2. Computer Organization and Architecture:
Number representation and arithmetic/logic operations, ALU, data-path and control unit. Instruction pipelining, Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

3. Programming and Data Structures:
Programming in C & C++, Recursion, Arrays, Stacks, Queues, linked lists, trees, binary search trees, binary heaps, graphs.

4. 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 and shortest paths.

5. theory of Computation:
Regular expressions and finite automata, context-free grammars and push-down automata, Regular and context-free languages, pumping lemma, turing machines ad un-decidability.

6. Compiler Design:
Lexical analysis, parsing, syntax-directed translation, Runtime environments, intermediate code generation.

7. Operating System:
Processes, threads, inter-process communication, concurrency and synchronization, Deadlock, CPU scheduling, Memory Management and virtual memory, File systems.

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

9. 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