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केन्द्रीय उच्च तिब्बती शिक्षा संस्थान  
CENTRAL INSTITUTE OF HIGHER TIBETAN STUDIES  
*Deemed to be University*  
Sarnath, Varanasi-221007

Advt. No.-CIHTS/ADMN/RECT/01/2025 - 181

Date: 27.09.2025

**Details of written test for Direct Recruitment to the post of Technical Officer Cum  
Computer Programmer Grade-I (UR-1)**

The following shall be the pattern of written test for selection to the post of **Technical Officer Cum Computer Programmer Grade-I** by direct recruitment:

<b>Date of Written Test</b>	<b>:</b>	<b>14-10-2025</b>
<b>Reporting Time</b>	<b>:</b>	<b>09:00 am</b>
<b>Time of Test</b>	<b>:</b>	<b>10:00 to 12:00 am</b>
<b>Duration</b>	<b>:</b>	<b>2 Hours</b>
<b>Venue</b>	<b>:</b>	<b>Atisha Hall, Kamalsheel Bhavan Central Institute of Higher Tibetan Studies, Sarnath, Varanasi. 221007</b>

**The process of direct recruitment will consist of three stages:**

1. Written Test - 100 Marks
2. Skill Test
3. Interview

**Stage 1: Written Test**

- The test will have objective type questions and descriptive type questions.
- The components of the written test are as follows.

Section	Components	Marks
<b>A</b>	Computer science & technology up to Graduate level	60
<b>B</b>	General Studies, Current Affairs, Logical reasoning, Quantitative aptitude, and data interpretation.	20
<b>C</b>	General English up to High school level	20
	<b>Total</b>	<b>100</b>

**Stage 2: Skill Test**

- The candidates shortlisted to appear for the skill test and Interview will be tested in C programming language and general computer knowledge like operating systems, system calls, MS suits etc.
- Time duration of skill test will be one hour.

### **Stage 3: Interview**

## **Syllabus**

### **Section A:**

1. **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).
2. **Programming and Data Structures:** Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.
3. **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.
4. **Operating Systems:** System calls, processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU and I/O scheduling. Memory management and virtual memory. File systems.
5. **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.
6. **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

### **Section -B:**

**General Studies, Current Affairs, Logical reasoning, Quantitative aptitude and data**

**interpretation:** Questions of this section will be such that they do not require a special study of any discipline.

### **Section -C:**

**General English: Reading, writing, comprehension and grammar.**

Questions of this section will be approximately of the level of High School or equivalent exam of a recognized Board of Education.

### **Note:**

1. The test paper shall be of total 100 Marks and duration of test shall be of 2 (TWO) hours.
2. There shall be no negative marking for wrong answers.

3. The candidates may write the answers of objective and descriptive questions of Section-A and Section-B of written test either in English or Hindi while it is compulsory to write answers of questions of Section-C in English.
4. Candidates are advised not to bring their personal belongings (like mobile phones, calculator, bags, original certificates etc.) except pen, pencil, eraser and Aadhar card at the venue of written test.
5. The written test is being conducted only for shortlisting of the candidates and selection will be made on the basis of performance of shortlisted candidates in the skill test and interview.

  
(Dr. Sunita Chandra)  
Registrar