

**Syllabus and Scheme for the Post of Junior Laboratory Assistant (Technical)**  
**Digital & Computing Services- Networks & Server Administration**  
**Post Code- 018**  
**Advertisement No. IIT Mandi/Recruit./NTS/2025/05 dated 17.12.2025**

There will be two-stage examination.

**Stage I:** Written Examination (Objective type)

**Stage II:** Skill/Trade Test

**Syllabus:**

**1. Computer Networks Fundamentals**

Basics of computer networking; Network types: LAN, WAN, MAN, WLAN; OSI and TCP/IP models; IP addressing (IPv4/IPv6) and subnetting concepts; MAC addressing and ARP; Common network devices: hub, switch, router, firewall, access point; TCP and UDP concepts; Common protocols: HTTP/HTTPS, FTP, SFTP, SMTP, POP3, IMAP, DNS, DHCP, SNMP.

**2. Switching and Routing Basics**

Ethernet concepts; VLANs; Static and dynamic routing (basic concepts); NAT and PAT; Overview of routing protocols such as RIP and OSPF.

**3. Linux Server Administration**

Linux directory structure and file system concepts; User and group management; File permissions and ownership; Process and service management; Package management using apt, yum, and dnf; System startup and service management (systemctl basics); Log files and basic troubleshooting; Common system and network tools (ping, traceroute, netstat/ss, top, df, du).

**4. Server Services and Management**

Web servers (Apache/Nginx – basic configuration concepts); File servers (NFS, Samba – basic concepts); Mail server fundamentals; Database server basics; DNS and DHCP server fundamentals; Backup and restore concepts.

**5. Virtualization and Cloud Basics**

Concepts of virtualization; Hypervisors; Virtual machines and containers; Introduction to cloud computing concepts including IaaS, PaaS, and SaaS.

**6. Storage and Backup Systems**

Storage types: DAS, NAS, SAN; RAID concepts and RAID levels; Backup strategies and tools; Basics of data recovery.

## **Important Instructions for candidates:**

### **General information about the exam:**

- The MCQs have negative marking for wrong answers. The unanswered questions will not be considered for evaluation. (*i.e.*, no marks will be awarded for any question not attempted).
- Only one best-suited answer has to be given for any MCQ. More than one answer will be treated as wrong answer.
- Use of only blue or black ballpoint pen is permitted to answer the questions and fill the form in the exam hall. Use of ink pen/gel pen/pencil/whitener is not permitted.
- Use of calculator, cell phones, log book, periodic table, and any type of electronic device etc., are strictly prohibited.
- Involvement in any malpractices will lead to disqualification
- Any additional instructions given during the selection process must be adhered/complied.

### **Final Selection:**

- Examinations for Stage-I and Stage-II will be conducted for all the candidates or as decided by the selection committee.
- Final selection will be made on the scores obtained in the Stage-I, as the Stage –II is of qualifying nature. But if a candidate fails to qualify in Stage-II, her/his candidature will not be considered further.
- Please note that for consideration in the merit list, a candidate has to secure minimum marks fixed by the selection committee in both exams at Stage-I and Stage-II – failing which institute will not make an offer of appointment even if vacancies go unfilled.