UNIVERSITY OF KASHMIR

NAAC ACCREDITED GRADE A+

UNIVERSITY CAMPUS, HAZRATBAL, SRINAGAR 190006, KASHMIR.

Notice

It is notified for the information of all the eligible candidates who had applied for the posts of Technical Assistant (Computer Science) advertised vide Advertisement Notice No. 01 of 2024 dated 16.08.2024 that the selection criteria and syllabus for the said posts shall be as under:

Selection Criteria:

Skill Test	70 marks
Interview	30 marks
Total marks allotted	100 marks

The syllabus for the above said posts is given in Annexure I to this Notice.

Sd/-

Deputy Registrar
Recruitment

No. F(NT-01)Rec/KU/25
May 06, 2025

Annexure I

Simulation / Skilled Test

The skilled test will be conducted using Cisco Packet Tracer, GNS3, or on physical networking devices, depending on the availability and scope of the assessment.

Networking

- Configure console, Telnet, and SSH access on Cisco devices with proper authentication and encryption settings. Set up secure passwords using the 'enable secret' and 'service password-encryption' commands.
- Assign IP addresses to interfaces, including calculating subnet masks, determining wildcard masks, broadcast addresses, and default gateways. Use both classful and classless addressing schemes.
- Configure VLANs on managed switches, assign switch ports to specific VLANs, and set up trunk links using IEEE 802.1Q encapsulation.
- Implement Inter-VLAN routing using Router-on-a-Stick (ROAS) or Layer 3 Switches. Verify connectivity across VLANs using ping and traceroute.
- Set up DHCP services on routers or dedicated servers, including DHCP pools, excluded addresses, lease time, and verify DHCP bindings. Configure DHCP relay where needed.
- Implement NAT (Static, Dynamic, PAT) for private-to-public IP translation. Test NAT configurations using real-time traffic simulations.
- Secure switch ports using port security (sticky MAC, shutdown on violation, restrict, protect modes).
- Configure and verify Spanning Tree Protocol (STP) and Rapid STP (RSTP) to prevent switching loops. Assign root bridge manually to optimize path selection.
- Implement Static and Default Routing on routers using appropriate route statements. Use administrative distances to manage routing decisions.
- Configure standard and extended Access Control Lists (ACLs) to filter network traffic based on IP addresses, protocols, and port numbers.
- Implement route redistribution between dynamic routing protocols (e.g., OSPF to EIGRP) with appropriate filtering and metric tuning.

Servers

- Install and configure Windows Server OS, applying initial configuration tasks such as renaming the computer, setting static IPs, and enabling remote management.
- Create and configure virtual machines using Hyper-V or Oracle VirtualBox. Allocate CPU, memory, storage, and configure network adapters.
- Set up a local web server using IIS. Deploy a sample web page, configure bindings, and ensure HTTP/HTTPS services are active.
- Install and configure DNS Server role. Create forward and reverse lookup zones, configure A, CNAME, MX, and PTR records, and test name resolution.
- Set up a file server with shared folders. Configure NTFS and share permissions. Enable offline files and access auditing.
- Create a mapped network drive for users with Group Policy or manual mapping. Configure folder redirection for user data.
- Implement Windows Server Backup. Schedule regular backups, create system image backups, and test restoration procedures for critical files and services.

23/4/2025

Linux-Based Skills

- Install and configure Linux distributions such as Ubuntu, CentOS, or Debian in a virtualized or bare-metal environment.
- Manage users, groups, and permissions using command-line tools (adduser, chmod, chown, etc.).
- Perform software installation and updates using package managers like APT, YUM, or DNF.
- Configure and manage system services using systemd (systemctl), including enabling/disabling services and checking logs with journalctl.
- Set up SSH access with public/private key authentication, and configure firewall rules using iptables or firewalld.
- Monitor system performance using tools like top, htop, df, du, and netstat.
- Write and debug shell scripts (Bash) for automation of administrative tasks.
- Set up cron jobs for scheduling periodic tasks and system maintenance.

DGX A100 Server Administration

- Understand DGX A100 system architecture, including the NVIDIA A100 Tensor Core GPUs, NVLink interconnect, and system components.
- Install and update DGX OS and NVIDIA drivers optimized for AI workloads.
- Configure Docker and NVIDIA Container Toolkit for GPU-accelerated containers.
- Monitor GPU utilization, temperature, and performance using nvidia-smi and DCGM tools.
- Manage deep learning environments using NVIDIA NGC containers and frameworks like TensorFlow, PyTorch, and RAPIDS.
- Configure network settings for high-speed data transfer using Mellanox/Infiniband interfaces.
- Implement system-level security and user access control for multi-user AI research environments.
- Backup and restore critical data and system configurations in a DGX environment.