



Syllabus for the post of JUNIOR TECHNICAL ASSISTANT
(Integrated Information System (IIS) Division)
(WRITTEN TEST & SKILL TEST)

Network Administration:	
Network Fundamentals	<ul style="list-style-type: none">- Introduction to the OSI and TCP/IP Model- Introduction to IPv4 (Internet Protocol)- IPv4 Packet Header- Address Resolution Protocol (ARP)- Introduction to TCP and UDP- TCP Header- Introduction to ICMP- Introduction to DNS, DNS lookup- User mode and Privileged mode- Spanning tree protocols- Network Topology- Different Type of Network devices and its configurations- PoE, NTP- Public and Private IP Addresses- Multicast- NGFW and IPS- Network Collisions, Jitter, Latency, Delay etc.- Security Concepts(Threats, Vulnerabilities, exploits etc)
Switching	<ul style="list-style-type: none">- MAC learning and Aging- Frame switching and Flooding.- Layer 2 Discovery Protocol- L2 vs L3 Switching- Layer 2 and Layer 3 Ether Channel (LACP, PAGP)- VoIP- STP
VLANs	<ul style="list-style-type: none">- VLANs Basic, VTP- How to configure VLANs, Trunk etc.- L3 and L2 VLAN
IPv4 Subnetting and Super netting	<ul style="list-style-type: none">- Introduction to Subnetting and Supernetting- Basics of Binary Numbers- Subnetting in Binary, Decimal (Fast Method)- Classless Inter-Domain Routing (CIDR)- Variable Length Subnet Mask (VLSM)- Hexadecimal to Binary and Decimal Conversion
IPv6	<ul style="list-style-type: none">- Introduction to IPv6- Shortening IPv6 Addresses- How to find IPv6 Prefix- IPv6 Address Types

DHCP (Dynamic Host Configuration Protocol)	<ul style="list-style-type: none"> - Introduction to DHCP - DHCP Server Configuration - DHCP Relay Agent - DHCP Client
Routing	<ul style="list-style-type: none"> - Default Gateway - Static and Dynamic Routing - Inter VLAN Routing - OSPF, BGP - Routing table - Classful v/s Classless Routing - Routing Protocol-Prefix, Network Mask, Administrative Distance, Gateway, Next-Hop, Metric etc. - Routing loops
Security	<ul style="list-style-type: none"> - AAA Authentication Protocol - ACL - Port Security - Device Access - Layer 2 Security Features (DHCP Snooping, Dynamic ARP Inspection, Port Security etc)
Device Management	<ul style="list-style-type: none"> - Introduction to SNMP - Syslog configuration and management - Flows - System Dump - Configuration Backup - OS upgradation
NAT	<ul style="list-style-type: none"> - Introduction to NAT and PAT - NAT Static & Dynamic - Port Address Translation (PAT)
Other Service	<ul style="list-style-type: none"> - Introduction to Quality of Service (QoS) - Port Channel - VoIP - IP Phone management etc. - CCTV and Physical Access Control - IoT and OT device - Data Center Monitoring - NMS Management
Passive Networking	<ul style="list-style-type: none"> - Lan cable color code - Crimping of Ethernet cables, I/Os - Testing and rectification of faulty cables. - Network RACK - Physical Interfaces and Cabling Types (Single Mode, Multimode Fiber) - Troubleshoot interface and cable issues
Wireless	<ul style="list-style-type: none"> - Introduction to Wireless Networks - Introduction to Wireless LANs - Wireless LAN 802.11 Service Sets - Introduction to Wireless Security - Wireless Authentication Methods - Wireless Encryption and Integrity

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| | <ul style="list-style-type: none">- Wi-Fi Protected Access (WPA)- WLC WPA2 PSK Authentication- Heat Map generation, RF survey.- Wireless Controller Management- Root Cause identification related to WiFi. |
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