Intorduction ot Networks

Describe basic characteristics of networks
Explain the purpose of the CISCO IOS
Describe CISCO command structure
Configure Cisco Device with basic setup using CLI
Configure a host device with an IP address
Verify connectivity between two end devices
Explain the role of protocols in network communications
Describe the physical layer
Explain the characteristics of copper cabling
Describe fiber-optic cabling and its advantages
Describe wireless media and standards
Explain the principles of communication
Build a UTP cable used in Ethernet
Describe the Data-link layer
Compare the functions of logical and physical topologies
Describe the operation of the Ethernet sublayer.
Explain the purpose of ARP
Configure a Layer 3 Switch
Explain how routers enable end-to-end communications
Explain the network layer protocols
Configure a router with basic configurations
Describe the purpose of the Transport layer
Explain characteristics of TCP and UDP
Describe the use of port numbers in communications
Explain a TCP session establishment
Compare the uses of TCP and UDP
Explain IPv4 addressing and subnet masks
Describe the types of IP addresses
Explain the differences between IPv4 and IPv6
describe the representation of IPv6 address
Use ping and traceroute utilities to test a network
Explain Routing
Subnet IPv4 addresses
Explain the benefits of VLSM
Explain IPv6 address assignments
Explain the functions of the Application, session and Presentation layers
Identify Protocols with regard to the OSI model
Explain how data is moved across the network
Explain a small network
Describe the need for basic security
Identify security vulnerabilities and general mitigation techniques
Configure network devices with hardening features
Verify the configuration of network devices

Routing and Switching Basics

Explain the trouble shooting process
Describe troubleshooting issues
Identify common problems
Explain the function of the help desk

Trouble shoot a basic network
Troubleshoot a basic wireless network

Routing and Switching

Describe convergance of data network
Compare the collsion domain to a broadcast domain
Expalin the advantages to static routing
Explain the disadvantages to static routing
Configure switch ports to meet network requirments
Configure the management and Virtual interface
Describe basic security practices in a switched envronment
Configure the port securtiy feature to restrice access
Explain the purpose of a VLAN
Configure a VLAN
Configure a Dynamic Trunk Protocol
Explain how a router builds a routing table
Describe the primary funtions and features of a router
Configure a router to route between networks
Configure a router using CLI
Describe inter-VLAN routing
Configure inter-VLAN routing
Configure inter-VLAN routing on a Layer 3 Switch
Configure Ipv4 static routes
Configure IPV6 Static routes
Configure IPv4 and IPv6 default routes
Configure summary network addresses
Configure a floating static route to provide backup
Explain dynamic routing protocols
Configure RIP
Configure EIGRP
Explain Link-state routing protocols
Configure OSPF
Describe how ACL's are used to filter traffic
Explain Acl's guidelines and placement
Configure a Standadrd ACL
Configure Excented ACL's
Configure IPv6 ACL's
Describe DHCP in an IPv4 network
Configure DHCP in an IPv4 network
Explain IPv6 DHCP
Configure IPv6 DHCP
Explain NAT in the Enterprise network
Configure NAT
Configure NAT64
Troubleshooting the Enterprise network
Describe the impact of Network Failure
Troubleshoot routing issues
Troubleshoot Switch issues
Troubleshoot WAN issues
Troubleshoot ACL's

Complete Portfolio
Complete Mock Job Interview

PROFESSIONAL STANDARDS
Work Effort
Safety Habits
Work Area Organization
On Task Behavior
Responsibility
Initiative
team Work
respect
Interpersonal Skills