CCNA (Cisco Certified Network Associate)

- ☐ Identify the components of a computer network and their basic characteristics.
- ☐ Understand the model of host-to-host communication.
- ☐ Describe the features and functions of the Cisco Internetwork Operating System (IOS) software.
- ☐ Describe Local Area Networks (LANs) and the role of switches within LANs.
- ☐ Describe Ethernet as the network access layer of TCP/IP and switch operations.
- ☐ Install a switch and perform initial configuration.
- ☐ Describe TCP/IP Internet layer, IPv4 addressing, and subnetting.
- ☐ Describe TCP/IP Transport and Application layers.
- ☐ Explore routing functions.
- ☐ Implement basic configuration on a Cisco router.
- ☐ Explain host-to-host communications across switches and routers.
- ☐ Identify and resolve common switched network issues and IPv4 addressing problems.
- ☐ Describe IPv6 features, addresses, and basic connectivity.
- ☐ Describe static routing operation, benefits, and limitations.
- ☐ Describe, implement, and verify Virtual Local Area Networks (VLANs) and trunks.
- ☐ Describe and configure inter-VLAN routing.
- ☐ Explain dynamic routing protocols, OSPF components, and terms.
- ☐ Explain Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocol (RSTP) operations.
- ☐ Configure link aggregation using Ether Channel.
- ☐ Describe Layer 3 redundancy protocols.
- ☐ Describe basic Wide Area Network (WAN) and Virtual Private Network (VPN) concepts.
- ☐ Describe Access Control Lists (ACLs) and their network applications.
- ☐ Configure Internet access using Dynamic Host Configuration Protocol (DHCP) and Network Address Translation (NAT).
- ☐ Describe Quality of Service (QoS) concepts.
- ☐ Explain wireless network types, Wireless LAN Controllers (WLCs) usage, and architectures.
- ☐ Introduce network and device architectures, virtualization concepts.

- [ ] Discuss network programmability, Software-Defined Networking (SDN), and smart network management solutions like Cisco DNA Centre, SD-Access, and SD-WAN.
- [ ] Configure basic IOS system monitoring tools.
- [ ] Describe Cisco device management.
- [ ] Discuss current security threat landscape and threat defense technologies.
- [ ] Implement basic security configurations to harden network devices.