## LABS CONDUCTED DURING CCNA(R&S) COURSE

**Name of Participant: -** _____

**Batch Details: -** _____

**Instructor: -** _____

| Sr. No. | Name of Lab | Yes | No |
|---|---|---|---|
| 1) | - Installation, Configuration & Verification Of WEB & FTP Server On Live Windows OS.<br>- Configuration of your own Website and Accessing the same from Remote machines<br>-Configuration of FTP Server and Downloading and uploading of Files from Remote Machines | | |
| 2) | Address Resolution Protocol (ARP) Lab On Live Router | | |
| 3) | Router Basic Configuration On Live Router | | |
| 4) | Router Password Recovery On Live Router | | |
| 5) | Router as a DHCP Server On Live Router and Switches | | |
| 6) | Basic Routing (Using Static IP's) on Live Multiple Routers | | |
| 7) | Basic Routing (Using Dynamic IP's) on Live Multiple Routers | | |
| 8) | Static Routing(Within LAN) on Live Multiple Routers | | |
| 9) | Static Routing(Within WAN) on Live Multiple Routers | | |
| 10) | Static Routing & Default Routing on Live Multiple Routers | | |
| 11) | Floating Static & Floating Default Routing on Live Multiple Routers | | |
| 12) | Switch Basic Configuration On Live L2 Switch | | |
| 13) | Routing Information Protocol Version 1 (RIPv1) on Live Multiple Routers | | |
| 14) | Routing Information Protocol Version 2 (RIPv2) on Live Multiple Routers on Live Multiple Routers | | |
| 15) | RIPv2 with redistribute connected cmd on Live Multiple Routers | | |
| 16) | RIPv2 with default-information originate cmd on Live Multiple Routers | | |
| 17) | EIGRP Lab – Equal Cost Load Balance on Live Multiple Routers | | |
| 18) | EIGRP Lab – Unequal Cost Load Balance on Live Multiple Routers | | |

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| 19) | Open Shortest Path First (OSPF) – Multiple Areas Lab on Live Multiple Routers | | |
| 20) | Cisco Discovery Protocol (CDP) On Live Multiple Layer2 Switches and Routers | | |
| 21) | Virtual Local Area Network (VLAN) On Live Layer3 Switches and MLS (Multilayer Switches) Cisco 3560 and Cisco 3750 Switches | | |
| 22) | VLAN Trunking ,Native VLAN On Live Multiple Layer2 Switches | | |
| 23) | Dynamic Trunking Protocol (DTP) On Live Multiple Layer2 Switches | | |
| 24) | Inter VLAN Routing – Router on a stick method On Live Router and L2 Switches | | |
| 25) | Inter VLAN Routing – SVI (Switched VLAN Interface) method On Live Layer3 Switches and MLS (Multilayer Switches) Cisco 3560 and Cisco 3750 Switches | | |
| 26) | VLAN Trunking Protocol (VTP) On Live Multiple Layer2 Switches | | |
| 27) | Spanning Tree Protocol (STP) On Live Multiple Layer2 Switches | | |
| 28) | Per VLAN STP (PVSTP) On Live Multiple Layer2 Switches | | |
| 29) | Rapid PVSTP (RPVSTP/RSTP) On Live Multiple Layer2 Switches | | |
| 30) | Switch Basic Security (Port Security) On Live Multiple Layer2 Switches | | |
| 31) | Standard Access Control List (Numbered) On Live Router | | |
| 32) | Standard Access Control List (Named) On Live Router | | |
| 33) | Extended Access Control List (Numbered) On Live Router | | |
| 34) | Extended Access Control List (Named) On Live Router | | |
| 35) | Reflexive ACL / Established ACL Lab On Live Router | | |
| 36) | Port Address Translation (PAT) / NAT Overload On Live Internet Link and Router | | |
| 37) | Static NAT On Live Internet Link and Router | | |
| 38) | Dynamic NAT without Overload On Live Internet Link and Router | | |
| 39) | Dynamic NAT with Overload On Live Internet Link and Router | | |
| 40) | High Level Data Link Control (HDLC) Lab On Live Router | | |
| 41) | Point-to-Point Protocol (PPP) Lab on Live Routers | | |
| 42) | PPP with Password Authentication Protocol (PAP) on Live Routers | | |
| 43) | PPP with Challenge Handshake Authentication Protocol (CHAP) on Live Routers | | |
| 44) | Configuring Frame Relay for a single neighbor On Live Frame Relay Switch and Routers | | |

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| 45) | Configuring Frame Relay for a Multipoint Sub interface On Live Frame Relay Switch and Routers | | |
| 46) | Configuring frame Relay for a Point-to-Point Sub interface On Live Frame Relay Switch and Routers | | |
| 47) | Site-to-Site Virtual Private Network (VPN) On Live Cisco Routers | | |
| 48) | IPv6 Configuration (Static Routing) On Live Routers | | |
| 49) | Wireless Practical, Wireless Security (WEP,WPA) On Live Wireless Access Point | | |
| 50) | Router Backup Creation & Recovery (Configuration Files & IOS) On Live Routers | | |
| 51) | Router Crash and IOS Recovery using different recovery methods on Live Routers | | |
| 52) | Telnet & SSH access of Router<br>Wireshark – Packet Analyzer Lab : Packet Capture and Troubleshooting using Packet Capture | | |
| 53) | Switch Password Recovery on Live Cisco Switch | | |
| 54) | Switch Backup Creation & Recovery (Configuration Files & IOS) on Live Switches | | |
| 55) | Switch Crash and IOS Recovery using different recovery methods on Live Switches | | |
| 56) | Security Device Manager (SDM) Installation, Configuration & Verification On Live ISR Routers Cisco 1800 and Cisco 2800 Routers | | |
| 57) | Live Project on NAT/PAT Configuration | | |
| 58) | Live Cisco Static NAT Project<br>Accessing Live Video Shooting/Streaming Anywhere from Internet | | |
| 59) | Live Project On Multisite VPN Tunneling<br>Every Participant will get :<br>✓ Two Sites<br>✓ ISR Routers Cisco 1800/2800 : 2 Nos<br>✓ Cisco 2950/ 2960 Switches : 2 Nos<br>✓ 2 PCs at each site<br>✓ Accessing Web Servers and RDP from Site-A to Site-B and vice versa<br>✓ Project Report signoff | | |
| 60) | Physical verification and Study Of Live Cisco Routers<br>✓ Cisco 2811 ISR Router<br>✓ Cisco 2801 ISR Router<br>✓ Cisco 1841 ISR Router<br>✓ Cisco 1812 ISR Router<br>✓ Cisco 2621 XM Router<br>✓ Cisco 2611 XM Router | | |

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| | ✓ Cisco 2610 XM Router<br>✓ Cisco 2650 XM Router<br>✓ Cisco 2610 Router<br>✓ Cisco 1712 Router<br>✓ Cisco 1721 Router<br>✓ Cisco 2503 Router<br>✓ Wireless Router<br>✓ WIC 1T<br>✓ WIC 2T<br>✓ ISDN BRI S-T<br>✓ NM-8AS<br>✓ HWIC Cards | | |
| 61) | Physical verification and Study Of Live Cisco Switches<br><br>✓ Cisco 3750G-E Layer 3, Multilayer & Stackable Switch<br>✓ Cisco 3750 MLS Switch<br>✓ Cisco 3560 L3/MLS Switch<br>✓ Cisco 3560 POE L3/MLS Switch<br>✓ Cisco 3550 Layer 3 Switches<br>✓ Cisco 2950 Layer 2 Switches<br>✓ Cisco 2960 Layer 2 Switches<br>✓ Cisco 1900 Layer 2 Switch | | |

**All the Above Networking Labs have been completed successfully by** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

**Participant's Name & Sign** **Instructors Name & Sign** **Director's Name & Sign**

# Annexure - I

# CCNA SYLLABUS:

## ➢ Networking Fundamentals:

- Describe the purpose and functions of various network devices Select the components required to meet a network specification
- Use the OSI and TCP/IP models and their associated protocols to explain how data flows in a network
- Describe common networked applications including web applications Describe the purpose and basic operation of the protocols in the OSI and TCP models
- Determine the path between two hosts across a network
- Network and Internet communications
- Identify and correct common network problems at layers 1, 2, 3 and 7 using a layered model approach
- Differentiate between LAN and WAN operation and features.

## ➢ Planning & Designing

- Design a simple LAN using Cisco Technology
- Design an IP addressing scheme to meet design requirements
- Select an appropriate routing protocol based on user requirements
- Design a simple internetwork using Cisco technology
- Develop an access list to meet user specifications
- Choose WAN services to meet customer requirements

## ➢ Implementation & Operation

- Configure routing protocols given user requirements
- Configure IP addresses, subnet masks, and gateway addresses on routers and hosts
- Configure a router for additional administrative functionality
- Configure a switch with VLANS and inter-switch communication
- Implement a LAN
- Customize a switch configuration to meet specified network requirements
- Manage system image and device configuration files
- Perform an initial configuration on a router
- Perform an initial configuration on a switch
- Implement access lists
- Implement simple WAN protocols

## ➢ Troubleshooting

- Utilize the OSI model as a guide for systematic network troubleshooting
- Perform LAN and VLAN troubleshooting
- Troubleshoot routing protocols
- Troubleshoot IP addressing and host configuration
- Troubleshoot a device as part of a working network
- Troubleshoot an access list
- Perform simple WAN troubleshooting

## ➢ Technology

- Describe network communications using layered models
- Describe the Spanning Tree process
- Compare and contrast key characteristics of LAN environments
- Evaluate the characteristics of routing protocols
- Evaluate TCP/IP communication process and its associated protocols
- Describe the components of network devices
- Evaluate rules for packet control
- Evaluate key characteristics of WANs

For More details please contact us @


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