

NETWORK ENGINEERING ROUTING & SWITCHING – SYLLABUS

- 1. Introduction to Computer Networks**
- 2. Cables**
- 3. OSI layer**
- 4. MAC Address**
- 5. TCP/IP Model**
- 6. TCP & UDP Protocol**
- 7. IPv4 & IPv6 Addressing**
- 8. Subnetting&Supernetting**
- 9. FLSM & VLSM**
- 10. Cisco Routers**
- 11. Switching Technology**
- 12. Spanning Tree Protocol(STP)**
- 13. Virtual LAN Network**
- 14. Layer 2 Protocols**
- 15. Etherchannel**
- 16. Switch Stacking & Chassis aggregation**
- 17. Routing Technology**
- 18. Open Shortest Path First (OSPF)**
- 19. Enhanced Interior Gateway Routing Protocol (EIGRP)**
- 20. WAN Technology**

21. Network Infrastructure

22. Network Address Translation & Network Time Protocol

23. Infrastructure Security

24. Access Control List (ACL)

25. Infrastructure Management

26. Cisco Discovery Protocol

27. Password Recovery & Configuring Register

28. Ping & Traceroute

TOPICS COVERED

1. Introduction to Computer Networks:

- Types of Networks
- Network Topologies
- Basic Hardware
- Networking Media

2. Cables:

- Types of cables
- Connecting devices using cables

3. OSI Layer:

- OSI reference
- 7 types of layer
- Identifying devices in OSI Layer

4. MAC Address:

- Main Purpose of MAC Address
- Uses of MAC Address
- Finding the MAC Address

5. TCP/IP Model:

- Configuration of TCP/IP model
- Comparison of OSI & TCP/IP Model
- IP Protocols Suits

6. TCP & UDP Protocol:

- Comparison of TCP & UDP Protocol

7. IPv4 & IPv6 Addressing:

- IPv4 & IPv6 Configuration
- Two parts of ipv4
 - Network id
 - Host id
- Identifying the classes of IP Address
- Assigning IP Address

8. Subnetting&Supernetting:

- Practicing subnetting&Supernetting
- Private Network

9. FLSM & VLSM:

- Purpose of FLSM & VLSM

10. Cisco Routers:

- Cisco IOS
- Entering in to CISCO IOS
- Configuring router basic setup

11. Switching Technology:

- Function of Switch
- Switch function learning

12. Spanning Tree Protocol(STP):

- Configuring STP

13. Virtual LAN Network:

- VLAN & its Configuration

14. Layer 2 Protocols:

- Configuration of Layer2 Protocols

15. Etherchannel:

- Configuration of Etherchannel

16. Switch Stacking & Chassis aggregation:

- Basic setup & Configuration steps

17. Routing Technology:

- Routing fundamentals
- Components of Routing table
- Types of Routing
- Static Routing
- Configuring static routing IPv4 & IPv6

18. Open Shortest Path First (OSPF):

- Configuring OSPFv2
- OSPFv2 single area
- Configuring OSPFv3

19. Enhanced Interior Gateway Routing Protocol (EIGRP):

- Configuring EIGRP
- EIGRP for IPv6

20. WAN Technology:

- Topology & Access options
- Quality of Service

21. Network Infrastructure:

- Configuring HDLC & PPP & MLPPP
- Infrastructure Services of DNS,DHCP

22. Network Address Translation & Network Time Protocol:

- NAT & its Configuration
- NTP & its Configuration

23. Infrastructure Security:

- Infrastructure Components in Enterprise Network
- Access Layer Threats migration technique
- Cloud resources on enterprise network architecture
- Port Security
- Device Hardening & Local Authentication
- Telnet & SSH and its Configuration

24. Access Control List (ACL):

- 3 Types of ACL(Standard, Extended, Named)
- Configuring Standard ACL
- Extended ACL
- Named ACL

25. Infrastructure Management:

- Configuration of SNMPv2 & SNMPv3
- Configuring SNMP
- Syslog & its Configuration

26. Cisco Discovery Protocol:

- Backup & Restore Configuration
- Upgrading IOS

27. Password Recovery & Configuring Register:

28. Ping &Traceroute:



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