CAP478:DATA COMMUNICATION AND NETWORKING-LABORATORY

L:0 T:0 P:2 Credits:1

Course Outcomes: Through this course students should be able to

CO1 :: understand the fundamental concepts of data flow and criteria for the selection of transmission media.

CO2 :: demonstrate the techniques for IP allocation in the networks and creation of the subnets.

CO3 :: contrast between static and dynamic routing protocols.

CO4 :: assess the working of various application layer services in the network.

List of Practicals / Experiments:

Networking basics

- demonstration of packet tracer installation and packet tracer interface
- design a peer-to-peer network using the packet tracer, check the connectivity using ping command,sending PDU in real time mode and simulation mode
- design two isolated networks in packet tracer to demonstrate the difference in working of hub andswitch
- design a network with hybrid topology that includes a bus backbone and three star networks, checkthe connectivity using ping command, sending PDU in real time mode and simulation mode

Connectivity between networks and routing

- connect two networks using a single router and configure the router for communication between thetwo networks
- connect two or more networks with a router in each network and configure the routers for staticrouting
- connect two or more networks with a router in each network and configure the routers for dynamicrouting using RIP
- use static routing to connect the subnets of a network assigned with the following network197.34.21.0/24, use FLSM to divide the network into subnet where every subnet supports at least 56hosts

Configuring network services

- configure HTTP server and demonstrate the process to access a website using IP address in real timeand simulation mode
- configure DNS server for two domain names with two HTTP servers in the networks and demonstratethe process to access both the servers using name resolution in real time and simulation modeswitch
- configure DHCP server and demonstrate how DHCP server assigns dynamic IP addresses to the nodesin local network
- configure DHCP server and demonstrate how DHCP server assigns dynamic IP addresses to the nodesin some other network
- configure the FTP server and demonstrate the working of FTP in real time and simulation mode
- configure two e-mail servers with different domain names and with at least four users in eachdomain, demonstrate the process of sending and receiving e-mail messages in real time andsimulation mode

Text Books:

1. CCNA 200-301 OFFICIAL CERT GUIDE by WENDELL ODOM, Pearson Education: Singapore

References:

1. COMPUTER NETWORKS by ANDREW S. TANENBAUM, DAVID J. WETHERALL, PEARSON