CAP276: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 :: Summarize 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 and switch

- design a network with hybrid topology that includes a bus backbone and three star networks, check the 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 the two networks

- connect two or more networks with a router in each network and configure the routers for static routing

- connect two or more networks with a router in each network and configure the routers for dynamic routing using RIP

- use static routing to connect the subnets of a network assigned with the following network 197.34.21.0/24, use FLSM to divide the network into subnet where every subnet supports at least 56 hosts

Configuring network services

- configure HTTP server and demonstrate the process to access a website using IP address in real time and simulation mode

- configure DNS server for two domain names with two HTTP servers in the networks and demonstrate the process to access both the servers using name resolution in real time and simulation mode

- configure DHCP server and demonstrate how DHCP server assigns dynamic IP addresses to the nodes in local network

- configure DHCP server and demonstrate how DHCP server assigns dynamic IP addresses to the nodes in 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 each domain, demonstrate the process of sending and receiving e-mail messages in real time and simulation mode

Text Books: 1. NETWORKING: THE COMPLETE REFERENCE by CRAIG ZACKER, Mc Graw Hill Education

References: 1. PACKET TRACER NETWORK SIMULATOR by JESIN A, PACKT PUBLISHING