



Course Title : Networks Laboratory			
Course Code: P18CSL57	Semester : 5	L:T:P - 0 : 0 : 3	Credits: 1.5
Contact Period : Practical :3 Hr, Exam: 3 Hr		Weightage :CIE:50% SEE:50%	

Course Content

Part - A

Simulation Exercises:

Note: Simulate the following programs using Cisco Packet tracer

- 1) Simulate the given topology and observe the working of each devices
 - a) LAN 1 have three devices connected to a hub1.
 - b) LAN 2 have two devices connected to a hub2.
 - c) Both the hubs are connected to a switch which is intern connected to a server.
- 2) Simulate a topology with 2 LAN's each having two devices connected to switches. Switches are connected to a common router. Observe the packet flow.
- 3) Simulate the topology where two networks are connected via two routers. Both the routers are in tern connected. Each LAN has only one device. Use static routing and observe the routing table at the end of simulation.
- 4) Simulate a topology where 3 routers are fully connected and a single device is connected to each router. Observe the flow of ICMP packets from one network to other.
- 5) Configure a network for browsing.

Part – B

Implement the following in C/C++:

- 1) Write a program for error detecting code using CRC.
- 2) Write a program for distance vector algorithm to find suitable path for transmission.
- 3) Using TCP/IP sockets, write a client – server program to make the client send the file name and to make the server send back the contents of the requested file if present.
- 4) Implement the above program using as message queues or FIFOs as IPC channels.
- 5) Write a program for simple RSA algorithm to encrypt and decrypt the data.
- 6) Write a program for Hamming code generation for error detection and correction.
- 7) Write a program for congestion control using leaky bucket algorithm

Course Outcomes

1. **Analyse** the working principles of various network components such as Hub, Switch, Router, Gateways etc., before construct any network.
2. **Design** and **Implement** the given problems using a Cisco Packet Tracer tool.
3. **Design** and **Construct** a Network (Wired or Wireless) and its performance can be measured based on various factors such as delay, throughput, and packet loss.
4. **Design** and **Implement** RSA, Hamming code, Leaky bucket, CRC, Distance Vector algorithm using C/C++ language.
5. **Design** and **Implement** Client – Server program using TCP/IP sockets and FIFOs (or Message Queues) as IPC channels.



CO-PO Mapping

CO	Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1	Analyse the working principles of various network components such as Hub, Switch, Router, Gateways etc. before construct any network.	1	1			1								1	
CO2	Design and Implement the given problems using a Cisco packet tracer tool.		1	2		2								1	
CO3	Design and Construct a Network (Wired or Wireless) and its performance can be measured based on various factors such as delay, throughput, and packet loss.	1	1	2		2								1	
CO4	Design and Implement RSA, Hamming code, Leaky bucket, CRC, Distance Vector algorithm using C/C++ language.		1	1		2								1	
CO5	Design and Implement Client-Server program using TCP/IP sockets and FIFOs (or Message Queues) as IPC channels.	1	1	1		2								2	
	Average	1	1	1.5		1.5								1.2	