CN LAB Test 2 Questions

SI No.	Questions
1	Create a simple topology of four nodes (Node1, Node2, Node3, Node4) separated by a point-to-point link. Setup a UdpClient on Node1 and a UdpServer on Node2. Let the data rate be set 5 Mbps and the delay be 2 ms. Now Setup another UdpClient on Node3 & Node4 and a server instance on Node2. Let the data rate be set 7 Mbps and the delay be 1 ms. Set the parameters for the clients. Demonstrate the usage of Flow monitor for the simulation by calculating throughput between Node 1 and Node 2.

2	Create a topology as given below
	
	    10.1.1.0 30.1.3.0
	m0--------- m1 -------------- n1 n2 n3 n4 -------------- n5
	     point-to-point | | | |
	                          =============
	                     LAN 20.1.2.0
	
	Choose m0 as client and n5 as server. Animate the simulation using NetAnim and visualize the packet flow.

3	Create a topology as given below
	
	     10.1.1.0
	 m1 -------------- n1 n2 n3 n4
	point-to-point | | | |
	               =============
	            LAN 20.1.2.0
	
	Choose m1 as client and n3 as server. Demonstrate the usage of flow monitor for the simulation by calculating Throughput.

4	Create a simple topology of four nodes (Node1, Node2, Node3, Node4) separated by a point-to-point link. Setup a UdpClient on Node1 and Node2. Let the data rate be set 5 Mbps and the delay be 2 ms. Now Setup another UdpClient on Node3 and a server instance on Node4. Let the data rate be set 7 Mbps and the delay be 1 ms. Set the parameters for the clients.Animate the simulation using NetAnim and visualize the packet flow.
5	Using TCP/IP sockets, write a client-server program to make client sending the file name and a word and the server to search for the presence of the word in the file and return the number of times the word being repeated in the file contents back to client.
6	Using UDP sockets, write a client-server program to make client send a word and the server to search for the presence of the word in a list of 5 files and return the filename/s in which the word is present back to client.

7	Implement the client server program using IPC through FIFO wherein the client sends a series of sentences to the server. The server writes all these sentences to a file and returns the contents of the file back to client.
8	Implement the leaky bucket algorithm for the following data. Bucket Size: 256Mbits Output Rate: 50Mbps Number of packets: 10 Packet Size in Mbits: 100, 345, 230,78, 980, 130, 7, 89, 670, 256 The interarrival time between each packet is 5s.
9	Implement Dijkstra's algorithm to compute the shortest path through a graph.
10	Write a program for distance vector algorithm to find suitable path for transmission.

Note: Input graphs for question number 9 and 10 will be given on the spot.