# SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMKUR-03

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
### NETWORK PROGRAMMING LAB (7CSL01)

| Program No.  B1 | | | Date: | |
| --- | --- | --- | --- | --- |
| Student Name: | | USN: | | Batch No: |

| **Evaluation:** | | | | |
| --- | --- | --- | --- | --- |
| **Observation writing and File maintenance (10 Marks)** | **Clarity in concepts (05 Marks)** | **Implementation and execution of the program (10 Marks)** | **Viva (10 Marks)** | **Total (35 Marks)** |
| | | | | |

| Sl.No | Name of the Faculty In-Charge | Signature |
| --- | --- | --- |
| **1.** | | |
| **2.** | | |

---

### Question No. 1

Simulate a three node point to point network with duplex links between them. Set queue size and vary the bandwidth and find number of packets dropped.

### Pre-requisites:

### Step-1: Write a TCL(Tool command language) Script for simulation.

1. Declare a network simulator to use it later for starting simulation.
2. Create and open a tracefile(lab1.tr) and a Network animator(NAM trace) file in write mode which is used to store and display the output.
3. Create 4 nodes.
4. Establish point to pint Duplex link between 3 nodes.
5. Set the queue size. (optional)
6. Attach transport and application layer protocols. (i.e udp and cbr).
7. Define source and destination nodes.
8. Define a 'finish' procedure.
   o Flush the traces
   o Execute NAM file
   o Close all files,
   o Check the events in trace file.
   o For all the events 'd' (d denotes dropped packets), display the packet type and sequence number.
   o Display total number of dropped packets.
9. Define the termination time and call the finish procedure.
10. Start network simulation.

| Event | Time | From Node | To Node | PKT Type | PKT Size | Flags | Fid | Src Addr | Dest Addr | Seq Num | Pkt id |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Structure of Trace Files

### Step-2: Run the simulation program:  `ns lab1.tcl`

### Step-3:  Now press the play button in the simulation window and the simulation will begin.