1. **Implement three node point-to-point networks with duplex**

**links between them. Set the queue size, vary the bandwidth and find the number of packets dropped.**

**TCL:**

#creates a new simulator

set ns [new Simulator]

set nf [open prog1.nam w]

$ns namtrace-all $nf

set nd [open prog1.tr w]

$ns trace-all $nd

proc finish { } {

global ns nf nd

$ns flush-trace

close $nf

close $nd

exec nam prog1.nam &

exit 0

}

#creating nodes

set n0 [$ns node]

set n1 [$ns node]

set n2 [$ns node]

#linking nodes

$ns duplex-link $n0 $n1 1Mb 10ms DropTail

$ns duplex-link $n1 $n2 512Kb 10ms DropTail

#setting queue size of the link

$ns queue-limit $n1 $n2 5

#creating a udp connection in network simulator

set udp0 [new Agent/UDP]

$ns attach-agent $n0 $udp0

#set up CBR over udp

set cbr0 [new Application/Traffic/CBR]

$cbr0 set packetSize\_ 500

$cbr0 set interval\_ 0.005

$cbr0 attach-agent $udp0

set sink [new Agent/Null]

$ns attach-agent $n2 $sink

$ns connect $udp0 $sink

#scheduling events

$ns at 0.2 "$cbr0 start"

$ns at 4.5 "$cbr0 stop"

$ns at 5.0 "finish"

$ns run

**AWK Script:**

BEGIN{

dcount = 0;

rcount = 0;

}

{

event = $1;

if(event == "d")

{

dcount++;

}

if(event == "r")

{

rcount++;

}

}

END {

printf("The no.of packets dropped : %d\n ",dcount);

printf("The no.of packets recieved : %d\n ",rcount);}



