Date : 2-12-22

Experiment No. 6

6) Simulate an Ethernet LAN using n nodes (6-10) changes error rate and data rate, and compare throughput And also plot the graph for different throughputs.

lab6.tcl

```
set ns [new Simulator]
set if [open lab8.tr w]
$ns trace-all $tf
set nf [open lab8.nam w]
$ns namtrace-all $nf
$ns color 0 blue
set n0 [$ns node]
$n0 color "red"
set n1 [$ns node]
$n1 color "red"
set n2 [$ns node]
$n2 color "red"
set n3 [$ns node]
$n3 color "red"
set n4 [$ns node]
$n4 color "magenta"
set n5 [$ns node]
$n5 color "magenta"
set n6 [$ns node]
$n6 color "magenta"
set n7 [$ns node]
$n7 color "magenta"
$ns make-lan "$n0 $n1 $n2 $n3" 100Mb 300ms LL
Queue/DropTail Mac/802-3
$ns make-lan "$n4 $n5 $n6 $n7" 100Mb 300MS LL
Queue/DropTail Mac/802-3
$ns duplex-link $n3 $n4 100Mb 300ms DropTail
```

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```
$ns duplex-link-op $n3 $n4 Color "green"
set err [new Error Model]
$ns lossmodel $err $n3 $n4
$err set rate-0.1
set udp [new Agent/UDP]
$ns attach-agent $n1 $udp
set cbr [new Application/Traffic/CBR]
$cbr attach-agent $udp
$cbr set fid=0
$cbr set packet size-1000
$cbr set interval-0.0001
set null [new Agent/Null]
$ns attach-agent $n3 $null
$ns connect $udp $null
proc finish {} {
global ns nf tf
$ns flush-trace
close $nf
close $tf
exec nam prog5.nam &
exit 0
}
$ns at 0.1 "$cbr start"
$ns at 3.0 "finish"
$ns run
```

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Experiment No. 6

Awk file

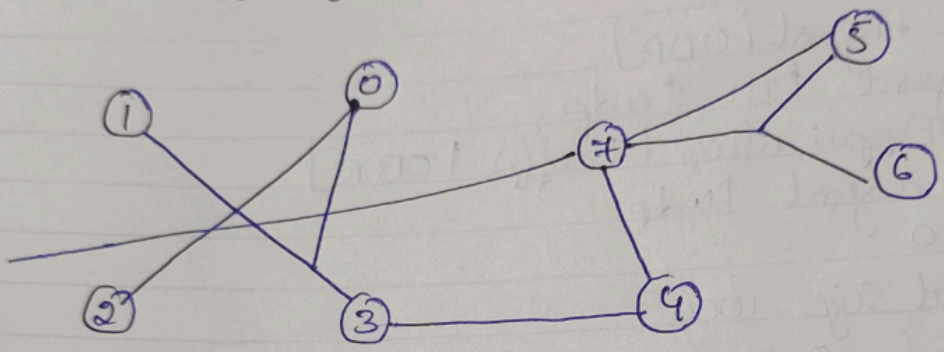
```
BEGIN{
pkt=0;
}
{ if ($1 =="r" && $3 = "a" && $4="7")
  pkt = pkt + $6;
  time = $2;
}
}
  END{
  printf("Throughput = %f Mbps", ((pkt/time)*(8/
                                  1000000)));
}
```

1.5

8 12 22

OUTPUT:

gedit lab6.tcl
ns lab6.tcl



gedit lab6.awk
awk -f lab6.awk lab6.tr
Throughput = 33.592560 Mbps