2. Implement transmission of ping messages/trace route over a network topology consisting of 6 nodes and find the number of packets dropped due to congestion.

```
set ns [new Simulator]
set tf [open lab2.tr w]
$ns trace-all $tf

set nf [open lab2.nam w]
$ns namtrace-all $nf

set n0 [$ns node]
set n1 [$ns node]
set n2 [$ns node]
set n3 [$ns node]
set n4 [$ns node]
set n5 [$ns node]

$n0 label "Ping1"
$n1 label "Ping2"
$n2 label "Ping3"
$n3 label "Ping4"
$n5 label "Ping5"

$ns duplex-link $n0 $n4 100Mb 300ms DropTail
$ns duplex-link $n1 $n4 1Mb 300ms DropTail
$ns duplex-link $n2 $n4 1Mb 300ms DropTail
$ns duplex-link $n3 $n4 100Mb 300ms DropTail
$ns duplex-link $n4 $n5 1Mb 300ms DropTail


#The below code is used to connect between the ping agent to the node
set ping1 [new Agent/Ping]
$ns attach-agent $n0 $ping1
$ping1 set packetSize_ 50000
$ping1 set interval_ 0.0001

set ping2 [new Agent/Ping]
$ns attach-agent $n1 $ping2

set ping3 [new Agent/Ping]
$ns attach-agent $n2 $ping3
$ping3 set packetSize_ 750
$ping3 set interval_ 0.0001
```

```
set ping4 [new Agent/Ping]
$ns attach-agent $n3 $ping4

set ping5 [new Agent/Ping]
$ns attach-agent $n5 $ping5

# Set queue limit between nodes
$ns queue-limit $n0 $n4 5
$ns queue-limit $n2 $n4 3
$ns queue-limit $n4 $n5 2


#Define a 'recv' function for the class 'Agent/Ping'
Agent/Ping instproc recv {from rtt} {
$self instvar node_
puts " The node [$node_ id] received an reply from $from with round trip time of $rtt"
}


$ns connect $ping1 $ping5
$ns connect $ping3 $ping4


proc finish {} {
global ns nf tf
exec nam lab2.nam &
$ns flush-trace
close $tf
close $nf
exit 0
}
```

```
#Schedule Events
$ns at 0.1 "$ping1 send"
$ns at 0.2 "$ping1 send"
$ns at 0.3 "$ping1 send"
$ns at 0.4 "$ping1 send"
$ns at 0.5 "$ping1 send"
$ns at 0.6 "$ping1 send"
$ns at 0.7 "$ping1 send"
$ns at 0.8 "$ping1 send"
$ns at 0.9 "$ping1 send"
$ns at 1.0 "$ping1 send"
$ns at 1.0 "$ping1 send"
$ns at 1.1 "$ping1 send"
$ns at 1.2 "$ping1 send"
$ns at 1.3 "$ping1 send"
$ns at 1.4 "$ping1 send"
$ns at 1.5 "$ping1 send"
$ns at 1.6 "$ping1 send"
$ns at 1.7 "$ping1 send"
$ns at 1.8 "$ping1 send"

$ns at 0.1 "$ping3 send"
$ns at 0.2 "$ping3 send"
$ns at 0.3 "$ping3 send"
$ns at 0.4 "$ping3 send"
$ns at 0.5 "$ping3 send"
$ns at 0.6 "$ping3 send"
$ns at 0.7 "$ping3 send"
$ns at 0.8 "$ping3 send"
$ns at 0.9 "$ping3 send"
$ns at 1.0 "$ping3 send"
$ns at 1.1 "$ping3 send"
$ns at 1.2 "$ping3 send"
$ns at 1.3 "$ping3 send"
$ns at 1.4 "$ping3 send"
$ns at 1.5 "$ping3 send"
$ns at 1.6 "$ping3 send"
$ns at 1.7 "$ping3 send"
$ns at 1.8 "$ping3 send"

$ns at 3.0 "finish"
$ns run
```