Program 4

```
#Define the following options in TCL script

set val(chan)   Channel/WirelessChannel

setval(prop)   Propagation/TwoRayGround

set val(ant)    Antenna/OmniAntenna

setval(ll)     LL

set val(ifq)    Queue/DropTail/PriQueue

setval(ifqlen) 50

set val(netif)  Phy/WirelessPhy

setval(mac)    Mac/802_11

set val(rp)     DSDV

setval(nn)     50

set val(x)      2000

setval(y)      1000

set val(stop)   10

setval(traffic)        cbr

set val(traffic)        tcp


#
```

```
set ns    [new Simulator]
set     tracefd       [open out.tr w]

$ns    trace-all   $tracefd

set   namtrace       [open out.nam w]

$ns   namtrace-all-wireless   $namtrace  $val(x)  $val(y)

set topo [new Topography]

$topo load_flatgrid $val(x) $val(y)

set god_ [create-god $val(nn)]//to create god object

$ns node-config –adhocRouting  $val(rp) \

-llType  $val(ll) \

-macType  $val(mac) \

-ifqType  $val(ifq) \

-ifqLen  $val(ifqlen) \

-antType  $val(ant) \

-propType  $val(prop) \

-phyType  $val(netif) \

-channelType  $val(chan) \

-topoInstance  $topo \

-agentTrace  ON \

-routerTrace  ON \
```

```
-macTrace  OFF \

-movementTrace  ON


for {set i 0} {$i < $val(nn) } { incr i } {

set node_($i) [$ns node]

}


for {set i 0} {$i < $val(nn)} { incr i } {

# 30 defines the node size for nam

$ns initial_node_pos $node_($i) 30

}


proc destination {} {

global ns val node_

set time 1.0

set now [$ns now]

for {set i 0} {$i<$val(nn)} {incr i} {

set xx [expr rand()*1600]

set yy [expr rand()*800]

$ns at $now “$node_($i) setdest $xx $yy 1000.0”

}
```

```
$ns at [expr $now+$time] “destination”

}

//To change node colors at the time of 1.0 , 2.0 , 3.0
for {set i 0} {$i < $val(nn) } {incr i } {

$node_($i) color yellow

$ns at 1.0 “$node_($i) color red”

}

for {set i 0} {$i < $val(nn) } {incr i } {

$node_($i) color yellow

$ns at 2.0 “$node_($i) color lightgreen”

}

for {set i 0} {$i < $val(nn) } {incr i } {

$node_($i) color yellow

$ns at 3.0 “$node_($i) color orange”

}

//To end nam and the simulation
$ns at $val(stop) “$ns nam-end-wireless $val(stop)”

$ ns at $val(stop) “stop”

$ns at 10.5 “puts \”end simulation\” ; $ns halt”

// Execute the nam file
proc stop {} {
```

```
global ns tracefd namtrace

$ns flush-trace

close $tracefd

close $namtrace

exec nam out.nam &

}

$ns run
```