**Dynamic Routing – Open Shortest Path First (OSPF) Protocol  
Intended Learning Outcome:**a. To understand the properties of OSPF protocol.  
b. To analyze how dynamic routing – OSPF is used by the Routers for routing the packets.

**Expected skills:**The basic concepts of IP address and Subnet mask.   
  
**Tools Required:**Cisco Packet Tracer Simulation Software  
  
**Session Detail:**

**Sample** Configuration for three routers:

**Router 01:**

Router>en

Router#config t

Router(config)#hostname R1

R1(config)#interface f0/0

R1(config-if)#ip address 172.16.0.1 255.255.0.0

R1(config-if)#no shutdown

R1(config-if)#exit

R1(config)#interface s2/0

R1(config-if)#clock rate 64000

R1(config-if)#ip address 172.17.0.1 255.255.0.0

R1(config-if)#no shut

R1(config-if)#exit

R1(config)#exit

R1#config t

R1(config)#router ospf 1

***\*\* Structure:: network <network> <wildcard mask> area 0 (backbone area)***

R1(config-router)#network 172.16.0.0 0.0.255.255 area 0

R1(config-router)#network 172.17.0.0 0.0.255.255 area 0

R1(config-router)#exit

R1(config)#exit

R1#copy run start

R1#show ip route

**Router 02:**

Router>en

Router#config t

Router(config)#hostname R2

R2(config)#interface f0/0

R2(config-if)#ip address 172.18.0.1 255.255.0.0

R2(config-if)#no shut

R2(config-if)#exit

R2(config)#interface s2/0

R2(config-if)#ip address 172.17.0.2 255.255.0.0

R2(config-if)#no shut

R2(config-if)#exit

R2(config)#interface s3/0

R2(config-if)#clock rate 64000

R2(config-if)#ip address 172.19.0.1 255.255.0.0

R2(config-if)#no shut

R2(config-if)#exit

R2(config)#exit

R2#copy run start

R2#config t

R2(config)#router ospf 1

***\*\* Structure:: network <network> <wildcard mask> area 0 (backbone area)***

R2(config-router)#network 172.17.0.0 0.0.255.255 area 0

R2(config-router)#network 172.18.0.0 0.0.255.255 area 0

R2(config-router)#network 172.19.0.0 0.0.255.255 area 0

R2(config-router)#exit

R2(config)#exit

R2#copy run start

R2#show ip route

**Router 03:**

Router>en

Router#config t

Router(config)#hostname R3

R3(config)#interface f0/0

R3(config-if)#ip address 172.20.0.1 255.255.0.0

R3(config-if)#no shut

R3(config-if)#exit

R3(config)#interface s2/0

R3(config-if)#ip address 172.19.0.2 255.255.0.0

R3(config-if)#no shut

R3(config-if)#exit

R3(config)#exit

R3#copy run start

R3#config t

R3(config)#router ospf 1

***\*\* Structure:: network <network> <wildcard mask> area 0 (backbone area)***

R3(config-router)#network 172.19.0.0 0.0.255.255 area 0

R3(config-router)#network 172.20.0.0 0.0.255.255 area 0

R3(config-router)#exit

R3(config)#exit

**Post Lab Exercise:**



**Further Readings:**

http://www.computernetworkingnotes.com/ccna-study-guide/ospf-configuration-step-by-step-guide.html