P1((A)-OSPF MD5 authentication)

ROUTER 1: Type the following command in the CLI mode

```
Router>enable
Router#configure terminal
Router(config)#router ospf 1
Router(config-router)#network 192.168.1.0 0.255.255.255 area 1
Router(config-router)#network 10.1.1.0 0.255.255.255 area 1
Router(config-router)#exit
Router(config)#exit
Router#
```

ROUTER 2: Type the following command in the CLI mode

```
Router>enable
Router#configure terminal
Router(config)#router ospf 1
Router(config-router)#network 10.1.1.0 0.255.255.255 area 1
Router(config-router)#network 100.2.2.0 0.255.255.255 area 1
Router(config-router)#exit
Router(config)#exit
Router#
```

ROUTER 3: Type the following command in the CLI mode

```
Router>enable
Router#configure terminal
Router(config)#router ospf 1
Router(config-router)#network 192.168.3.0 0.255.255.255 area 1
Router(config-router)#network 100.2.2.0 0.255.255.255 area 1
Router(config-router)#exit
Router(config)#exit
```

(MD5 Authentication)

ROUTER 1: Type the following command in the CLI mode

```
Router>enable
Router#
Router#configure terminal
Router(config)#interface Serial0/0/0
```

Router(config-if)#ip ospf authentication message-digest
Router(config-if)#ip ospf message-digest-key 1 md5 smile
Router(config-if)#exit
Router(config)#exit

ROUTER 2: Type the following command in the CLI mode

Router>enable
Router#
Router#configure terminal
Router(config)#interface Serial0/0/0
Router(config-if)#ip ospf authentication message-digest
Router(config-if)#ip ospf message-digest-key 1 md5 smile
Router(config-if)#exit
Router(config)#exit

(Verify the MD5 Authentication using the following command in the CLI mode of Router1)

Router#show ip ospf interface gigabitEthernet 0/1

OUTPUT:(We get the following output:
GigabitEthernet0/1 is up, line protocol is up
Internet address is 192.168.2.1/24, Area 1
Process ID 1, Router ID 192.168.2.1, Network Type BROADCAST, Cost: 1
Transmit Delay is 1 sec, State BDR, Priority 1
Designated Router (ID) 192.168.3.1, Interface address 192.168.2.2
Backup Designated Router (ID) 192.168.2.1, Interface address 192.168.2.1
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
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Hello due in 00:00:06
Index 2/2, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 1
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 1, Adjacent neighbor count is 1
Adjacent with neighbor 192.168.3.1 (Designated Router)
Suppress hello for 0 neighbor(s)
Message digest authentication enabled
Youngest key id is 1)