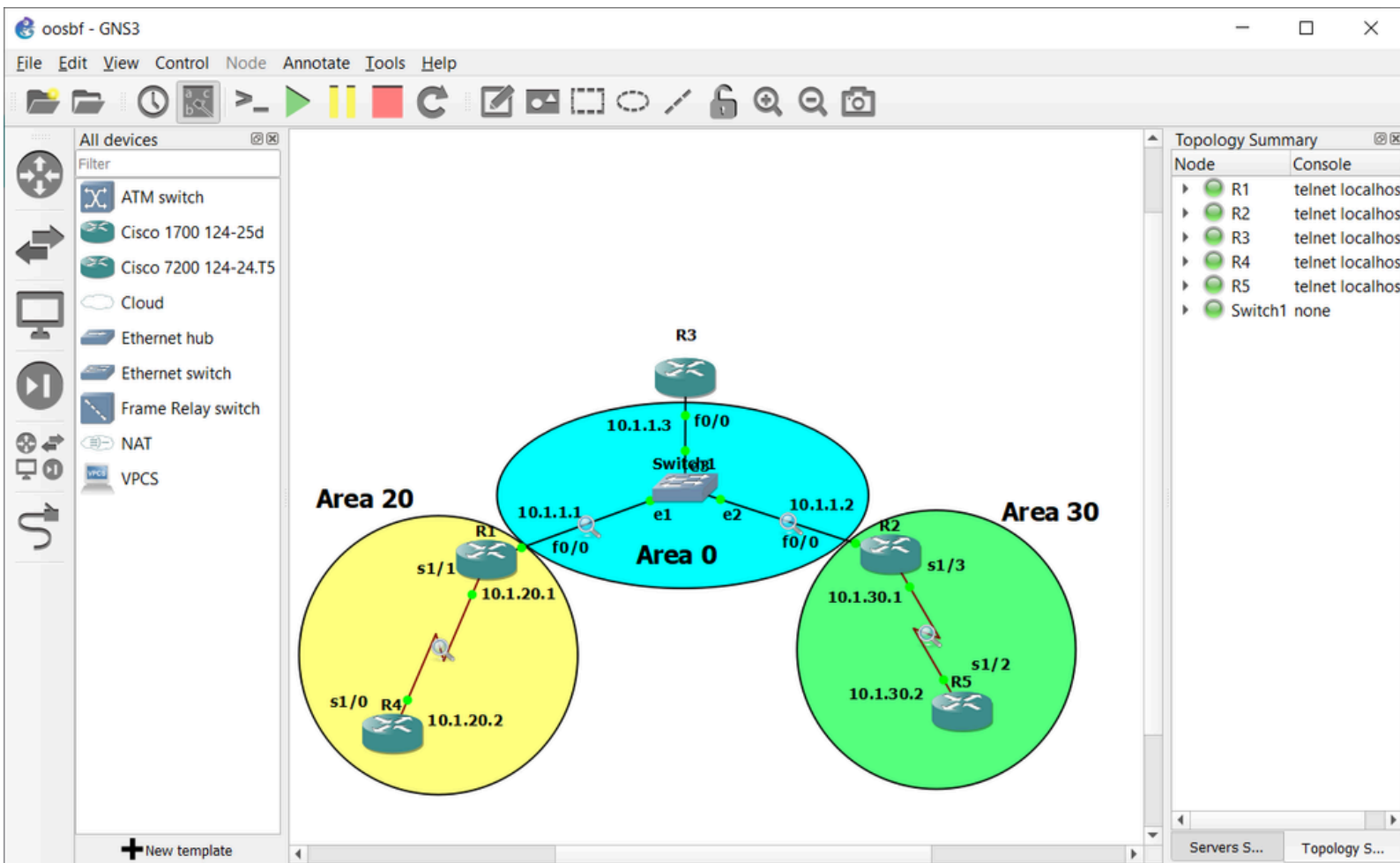# QUIZ - 20

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R3_DEPI3_ONL3_ISS8_S4   FORTINE CYBERSECURITY ENGINEER

OSPF Area 0-20-30 Design and neighbor State Using GNS3 :

R1 as ABR , Router id 1.1.1.1 ip for interfaces as shown .

R4 , Router id 2.2.2.2 ip for interface as shown .

R2 as ABR , Router id 3.3.3.3 ip for interfaces as shown .

R5 , Router id 4.4.4.4 ip for interface as shown .

R3 , Router id 5.5.5.5 ip for interface as shown .

Configuration for routers :

```
R1                                                    —    □    ✕
R1#configure t
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int s1/1
R1(config-if)#ip add 10.1.20.1 255.255.255.0
R1(config-if)#no sh
R1(config-if)#exit
*Sep  5 01:28:35.319: %LINK-3-UPDOWN: Interface Serial1/1, changed state to up
R1(config-if)#exit
*Sep  5 01:28:36.323: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/1,
 changed state to up
R1(config-if)#exit
R1(config)#int f0/0
R1(config-if)#ip add 10.1.1.1 255.255.255.0
*Sep  5 01:29:01.507: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/1,
 changed state to down
R1(config-if)#ip add 10.1.1.1 255.255.255.0
R1(config-if)#no sh
R1(config-if)#exit
R1(config)#
*Sep  5 01:29:12.255: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Sep  5 01:29:13.255: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R1(config)#router ospf 1
R1(config-router)#router-id 1.1.1.1
R1(config-router)#network 10.1.20.1 0.0.0.0 area 20
R1(config-router)#network 10.1.1.1 0.0.0.0 area 0
R1(config-router)#exit
R1(config)#
*Sep  5 01:35:01.487: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/1,
 changed state to up
R1(config)#
```

```
R4                                                    —    □    ✕
R4#conf
R4#configure t
R4#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R4(config)#int s1/0
R4(config-if)#ip add 10.1.20.2 255.255.255.0
R4(config-if)#no sh
R4(config-if)#exit
*Sep  5 01:32:39.307: %LINK-3-UPDOWN: Interface Serial1/0, changed state to up
R4(config-if)#exit
R4(config)#
*Sep  5 01:32:40.311: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/0,
 changed state to up
R4(config)#router ospf 1
R4(config-router)#router-id 2.2.2.2
R4(config-router)#network 10.1.20.2 0.0.0.0 area 20
R4(config-router)#
*Sep  5 01:34:01.383: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on Serial1/0 from L
OADING to FULL, Loading Done
R4(config-router)#^Z
R4#
```

```
R3                                                    —    □    ✕
R3#
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#int f0/0
R3(config-if)#ip add 10.1.1.3 255.255.255.0
R3(config-if)#no shu
R3(config-if)#exit
*Sep  5 01:42:10.875: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Sep  5 01:42:11.875: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R3(config-if)#exit
R3(config)#router ospf 1
R3(config-router)#router-id 5.5.5.5
R3(config-router)#network 10.1.1.3 0.0.0.0 area 0
R3(config-router)#
*Sep  5 01:43:18.487: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on FastEthernet0/0
from LOADING to FULL, Loading Done
R3(config-router)#exit
*Sep  5 01:43:24.187: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on FastEthernet0/0
from LOADING to FULL, Loading Done
R3(config-router)#exit
R3(config)#do wr
Building configuration...
```

```
R2                                                              —    □    ✕

R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int s1/3
R2(config-if)#ip add 10.1.30.1 255.255.255.0
R2(config-if)#no sh
R2(config-if)#exit
*Sep  5 01:36:27.351: %LINK-3-UPDOWN: Interface Serial1/3, changed state to up
R2(config-if)#exit
R2(config)#
*Sep  5 01:36:28.355: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/3,
 changed state to up
R2(config)#int f0/0 1.1.
*Sep  5 01:36:52.651: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/3,
 changed state to down
R2(config)#int f0/0
R2(config-if)#ip add 10.1.1.2 255.255.255.0
R2(config-if)#no sh
R2(config-if)#exit
*Sep  5 01:37:24.891: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Sep  5 01:37:25.891: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R2(config-if)#exit
R2(config)#router ospf 1
R2(config-router)#router-id 3.3.3.3
R2(config-router)#network 10.1.30.1 0.0.0.0 area 30
R2(config-router)#network 10.1.1.2 0.0.0.0 area 0
R2(config-router)#exit
R2(config)#
*Sep  5 01:41:59.555: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on FastEthernet0/0
from LOADING to FULL, Loading Done
R2(config)#do wr
Building configuration...
[OK]
R2(config)#
*Sep  5 01:43:32.631: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/3,
 changed state to up
R2(config)#
```

```
R5                                                              —    □    ✕

R5#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R5(config)#int s1/2
R5(config-if)#ip add 10.1.30.2 255.255.255.0
R5(config-if)#no sh
R5(config-if)#exit
*Sep  5 01:40:51.247: %LINK-3-UPDOWN: Interface Serial1/2, changed state to up
R5(config-if)#exit
R5(config)#
*Sep  5 01:40:52.255: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1/2,
 changed state to up
R5(config)#router os
R5(config)#router ospf 1
R5(config-router)#router-id 4.4.4.4
R5(config-router)#network 10.1.30.2 0.0.0.0 area 30
R5(config-router)#
*Sep  5 01:41:45.903: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on Serial1/2 from L
OADING to FULL, Loading Done
R5(config-router)#exit
R5(config)#do wr
Building configuration...
[OK]
R5(config)#exit
```

SHOW IP OSPF NEIGHBOR :

```
R1                                                    —   □   ✕
R1#show ip ospf n
R1#show ip ospf neighbor

Neighbor ID      Pri    State          Dead Time    Address        Interface
3.3.3.3            1    FULL/BDR       00:00:35     10.1.1.2       FastEthernet0/
0
5.5.5.5            1    FULL/DROTHER   00:00:39     10.1.1.3       FastEthernet0/
0
2.2.2.2            0    FULL/  -       00:00:39     10.1.20.2      Serial1/1
R1#
```

```
R2                                                    —   □   ✕
R2#show ip osp
R2#show ip ospf n
R2#show ip ospf neighbor

Neighbor ID      Pri    State          Dead Time    Address        Interface
1.1.1.1            1    FULL/DR        00:00:33     10.1.1.1       FastEthernet0/
0
5.5.5.5            1    FULL/DROTHER   00:00:38     10.1.1.3       FastEthernet0/
0
4.4.4.4            0    FULL/  -       00:00:34     10.1.30.2      Serial1/3
R2#
```

```
R3                                                    —   □   ✕
R3#show ip ospf neighbor

Neighbor ID      Pri    State          Dead Time    Address        Interface
1.1.1.1            1    FULL/DR        00:00:32     10.1.1.1       FastEthernet0/0
3.3.3.3            1    FULL/BDR       00:00:33     10.1.1.2       FastEthernet0/0
R3#
```

```
R4                                                    —   □   ✕
[OK]
R4(config)#exit
R4#do wr
*Sep  5 02:30:37.695: %SYS-5-CONFIG_I: Configured from console by console
R4#show ip os
R4#show ip ospf n
R4#show ip ospf neighbor

Neighbor ID      Pri    State          Dead Time    Address        Interface
1.1.1.1            0    FULL/  -       00:00:35     10.1.20.1      Serial1/0
R4#
```

```
R5                                                    —   □   ✕
R5#show ip ospf neighbor

Neighbor ID      Pri    State          Dead Time    Address        Interface
3.3.3.3            0    FULL/  -       00:00:37     10.1.30.1      Serial1/2
R5#
```

Wireshark Capture :

Area 20

Capturing from Standard input [R4 Serial1/0 to R1 Serial1/1] — □ ✕

File   Edit   View   Go   Capture   Analyze   Statistics   Telephony   Wireless   Tools   Help

ospf

No.	Time	Source	Destination	Protocol	Length	Info
16	31.453021	10.1.20.2	224.0.0.5	OSPF	84	Hello Packet
18	39.453344	10.1.20.1	224.0.0.5	OSPF	84	Hello Packet
20	40.832316	10.1.20.2	224.0.0.5	OSPF	84	Hello Packet
21	43.290159	10.1.20.1	224.0.0.5	OSPF	100	LS Update
22	43.305608	10.1.20.1	224.0.0.5	OSPF	80	LS Update
23	45.786403	10.1.20.2	224.0.0.5	OSPF	88	LS Acknowledge
25	49.324273	10.1.20.1	224.0.0.5	OSPF	84	Hello Packet
27	50.575698	10.1.20.2	224.0.0.5	OSPF	84	Hello Packet
30	58.574675	10.1.20.1	224.0.0.5	OSPF	84	Hello Packet
32	60.348796	10.1.20.2	224.0.0.5	OSPF	84	Hello Packet

Area 30

Capturing from Standard input [R5 Serial1/2 to R2 Serial1/3] — □

File   Edit   View   Go   Capture   Analyze   Statistics   Telephony   Wireless   Tools   Help

ospf

No.	Time	Source	Destination	Protocol	Length	Info
5	9.443642	10.1.30.2	224.0.0.5	OSPF	84	Hello Packet
6	13.233352	10.1.30.1	224.0.0.5	OSPF	84	Hello Packet
10	18.937957	10.1.30.2	224.0.0.5	OSPF	84	Hello Packet
11	23.160416	10.1.30.1	224.0.0.5	OSPF	84	Hello Packet
14	28.925796	10.1.30.2	224.0.0.5	OSPF	84	Hello Packet
16	32.555565	10.1.30.1	224.0.0.5	OSPF	84	Hello Packet
19	38.671308	10.1.30.2	224.0.0.5	OSPF	84	Hello Packet
20	42.516626	10.1.30.1	224.0.0.5	OSPF	84	Hello Packet
23	48.065014	10.1.30.2	224.0.0.5	OSPF	84	Hello Packet
24	52.297391	10.1.30.1	224.0.0.5	OSPF	84	Hello Packet

Area 0

Capturing from Standard input [R3 FastEthernet0/0 to Switch1 Ethernet3] — □

File   Edit   View   Go   Capture   Analyze   Statistics   Telephony   Wireless   Tools   Help

ospf

No.	Time	Source	Destination	Protocol	Length	Info
5	4.682551	10.1.1.1	224.0.0.5	OSPF	98	Hello Packet
6	9.908514	10.1.1.2	224.0.0.5	OSPF	98	Hello Packet
8	12.399669	10.1.1.3	224.0.0.5	OSPF	98	Hello Packet
9	14.480494	10.1.1.1	224.0.0.5	OSPF	98	Hello Packet
10	19.566499	10.1.1.2	224.0.0.5	OSPF	98	Hello Packet
12	21.915948	10.1.1.3	224.0.0.5	OSPF	98	Hello Packet
13	23.652647	10.1.1.1	224.0.0.5	OSPF	98	Hello Packet
14	28.592599	10.1.1.2	224.0.0.5	OSPF	98	Hello Packet
16	31.612550	10.1.1.3	224.0.0.5	OSPF	98	Hello Packet
18	33.001931	10.1.1.1	224.0.0.5	OSPF	98	Hello Packet