UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Supplementary Examination, December 2020

Course: R&S Connecting Networks **Semester: VI**
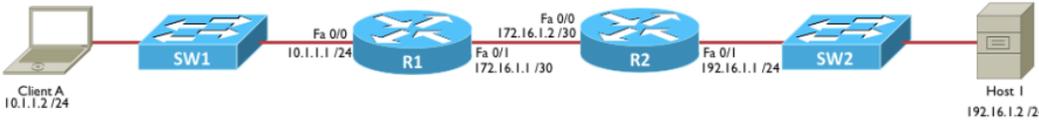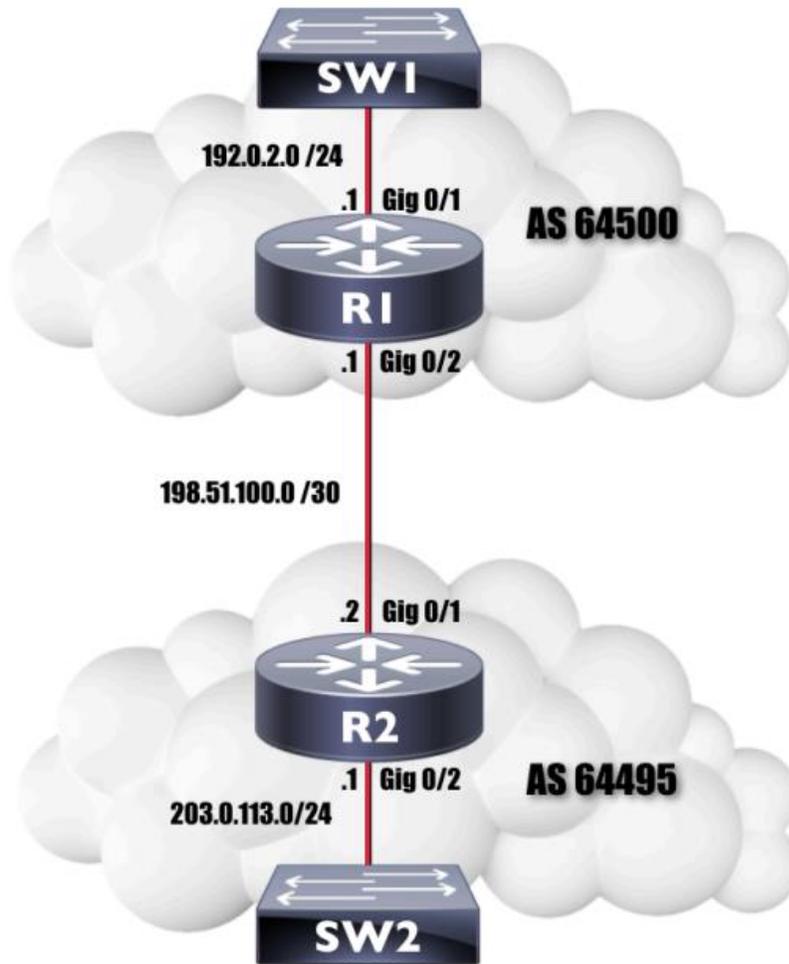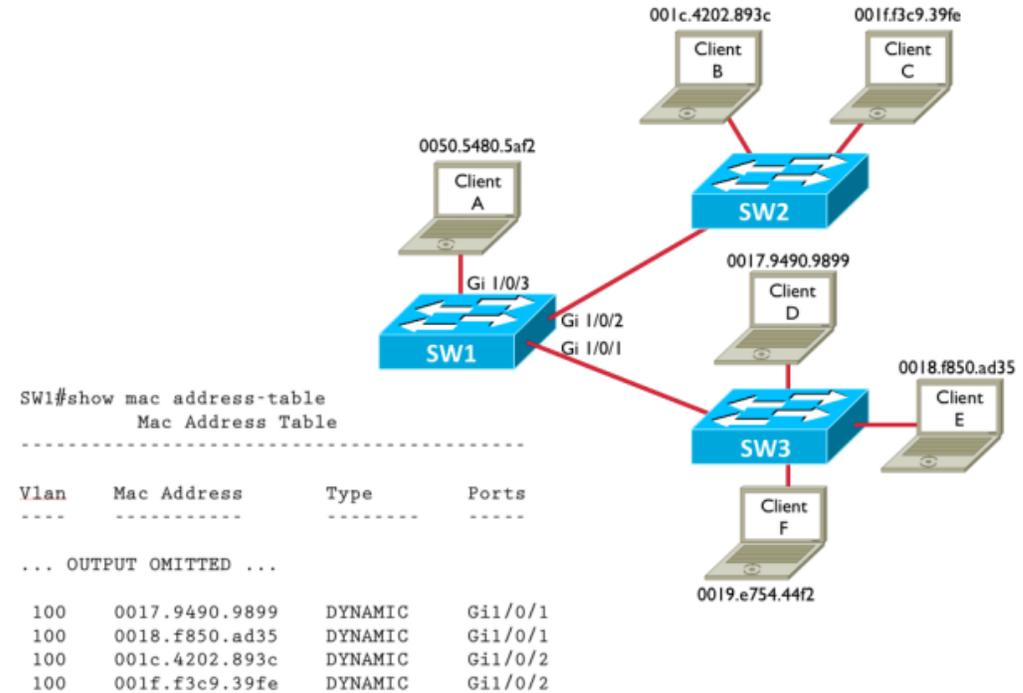**Program: BCA** **Time 03 hrs.**
Course Code: CSBC3007 **Max. Marks: 100**

Instructions: Attempt all questions.

SECTION A

S. No.		Marks	CO
Q 1	Consider the following port security configuration: Switch(config)# int gig 1/0/1 Switch(config-if)# switchport mode access Switch(config-if)# switchport port-security Switch(config-if)# switchport port-security maximum 3 Switch(config-if)# switchport port-security mac-address sticky Switch(config-if)# switchport port-security violation shutdown What does the shutdown option in the bottom command do?	5	CO1
Q 2	Switch resides at what layer of the TCP/IP Model?	5	CO1
Q 3	In the diagram below, Client A is sending a packet to Host 1. As the packet is coming into the Fa 0/0 interface on router R2, what is the source IP address in the packet's header? 	5	CO1
Q 4	You are configuring eBGP on router R1 seen in the figure. You want to form a BGP neighborship with router R2. Which command would you issue from within BGP router configuration mode on router R1?	5	CO2

Diagram showing SW1 connected to 192.0.2.0 /24, R1 with .1 Gig 0/1 in AS 64500, R1 .1 Gig 0/2 connected to 198.51.100.0 /30, R2 with .2 Gig 0/1 in AS 64495, R2 .1 Gig 0/2 connected to 203.0.113.0/24, and SW2.

Q 5	You are assigning IP addresses to hosts in the 192.168.4.0 /26 subnet. Determine subnets and usable address ranges.	**5**	**CO1**
Q 6	The PING utility uses the _____ protocols to check for network connectivity to an IP address.	**5**	**CO2**
	SECTION B		
Q 7	Determine the directed broadcast address of a subnet containing an IP address of 172.16.1.10 /19?	**10**	**CO1**
Q 8	Consider the following topology. Client F has just booted up, and its MAC address has not been learned by switch SW1 (as seen in the output of **the show mac address-table** command). If Client A sends a frame destined for Client F's MAC address, what will switch SW1 do with the frame, explain in detail? (Assume all switch ports are assigned to VLAN 100.)	**10**	**CO2**

001c.4202.893c 001f.f3c9.39fe

Client B   Client C

0050.5480.5af2

Client A

SW2

0017.9490.9899

Client D

Gi 1/0/3

Gi 1/0/2

Gi 1/0/1

SW1

0018.f850.ad35

Client E

SW3

Client F

0019.e754.44f2

```
SW1#show mac address-table
        Mac Address Table
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Vlan    Mac Address      Type        Ports
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... OUTPUT OMITTED ...

100     0017.9490.9899   DYNAMIC     Gi1/0/1
100     0018.f850.ad35   DYNAMIC     Gi1/0/1
100     001c.4202.893c   DYNAMIC     Gi1/0/2
100     001f.f3c9.39fe   DYNAMIC     Gi1/0/2
100     0050.5480.5af2   DYNAMIC     Gi1/0/3
```

Q 9	Explain the three layers of Cisco's traditional hierarchical network design model with the help of diagram.	10	CO1
Q 10	Your router has more than one routing information source that is telling the router how to reach the 10.10.10.0 /24 network. One source is a statically configured route. Another source is the OSPF routing protocol, and yet another source is the EIGRP routing protocol. Determine which routing information source the router will use?	10	CO2
Q 11	The default OSPF cost for a 1 Gbps link is 1. Calculate the default cost for a 100 Mbps link.	10	CO2

SECTION-C

| Q 1 | Explain the following with the help of diagrams.
A DHCP and its configuration
B NAT operations and its troubleshooting | 20 | CO3 |