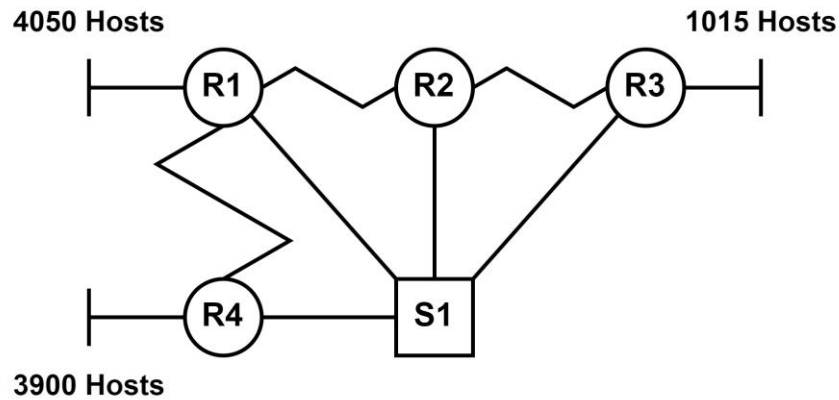


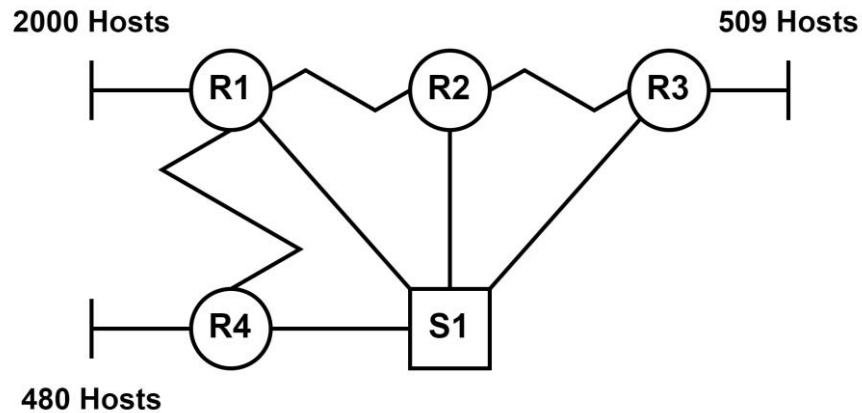
CO1:	CO2:	CO3:	Total:
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Q1 [CO3] Suppose you are given the network address 85.34.0.0/15. Using VLSM, create subnets for the network topology given below. Here, R1-R4 denote routers and S1 is a switch. You must show your workings in detail and properly label which subnet is being assigned to which network.

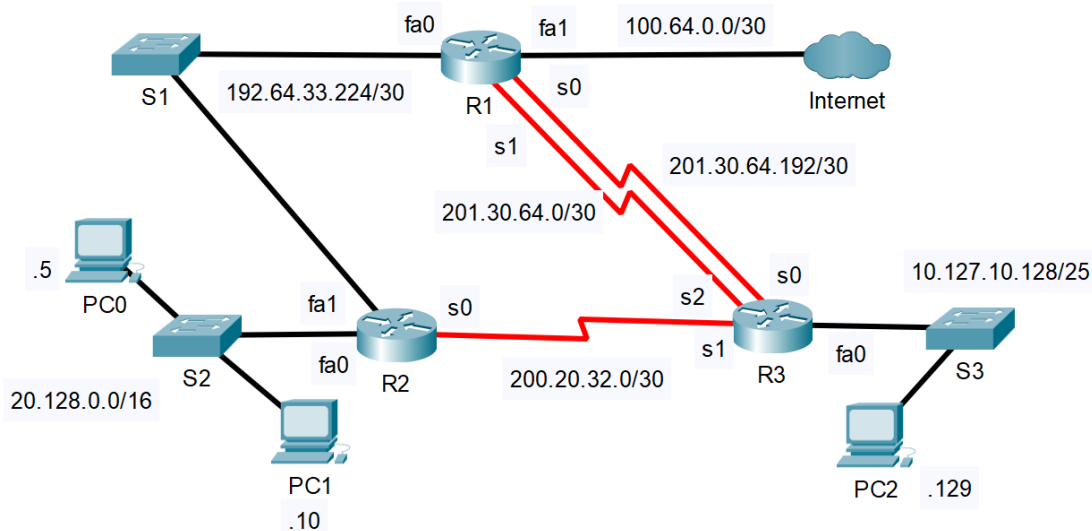


CO1:	CO2:	CO3:	Total:
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Q1 [CO3] Suppose you are given the network address 41.80.0.0/13. Using VLSM, create subnets for the network topology given below. Here, R1-R4 denote routers and S1 is a switch. You must show your workings in detail and properly label which subnet is being assigned to which network.



CO1:	CO2:	CO3:	Total:
------	------	------	--------



R1	fa0	.225
	fa1	.1
	s0	.193
	s1	.1

R2	fa0	.32
	fa1	.226
	s0	.1
	s1	

R3	fa0	.130
	s0	.194
	s1	.2
	s2	.2

Q1 [CO3] Configure a directly attached static route (via serial links) on R1 for the network connected to R3 fa0 interface. **[3 marks]**

Q2 [CO3] Configure a floating static route on R1 to the same network of the previous question. **[3 marks]**

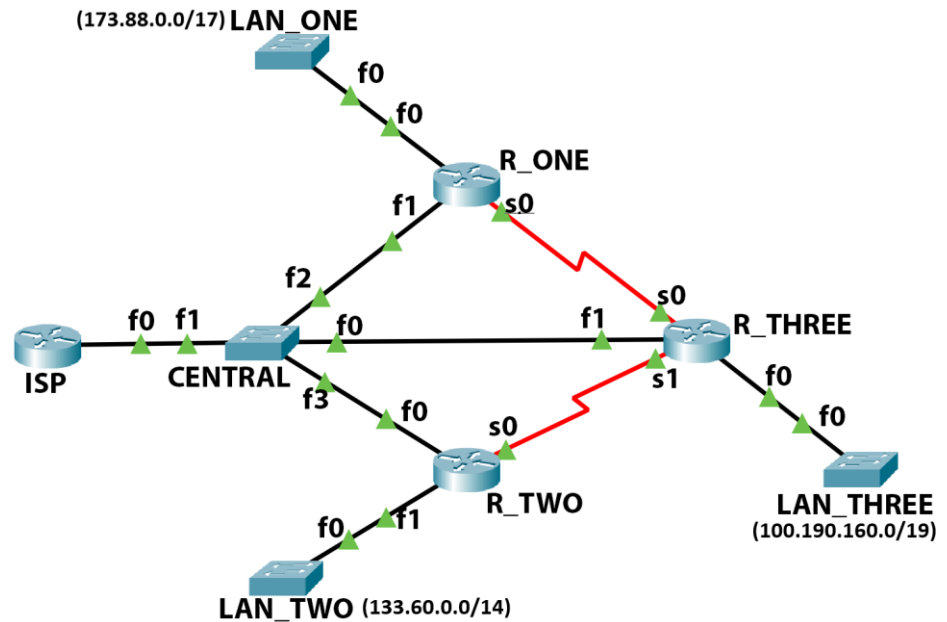
Q3 [CO3] Suppose a packet with the destination IP address 20.20.10.2 arrives at the fa0 interface of R1. What will the router do with this packet? Suggest a necessary solution (with configuration), if there is a problem. **[3 marks]**

Q4 [CO3] Can the administrative distance of a primary static route be greater than 1? Explain why or why not. **[3 marks]**

Q5 [CO3] PC1 wants to browse the internet. Configure the necessary static routes on R2 (via S1) so that PC1 can smoothly visit the internet. **[3 marks]**

CO1:	CO2:	CO3:	Total:
------	------	------	--------

Given, the following IP Address Table and topology diagram



Device	Interface	IP Address
R_ONE	s0	74.37.66.23
R_ONE	f1	79.145.51.56
R_TWO	s0	83.68.27.16
R_TWO	f0	79.145.51.106
R_THREE	s0	74.37.66.46
R_THREE	s1	83.68.27.48
R_THREE	f1	79.145.51.14
ISP	f0	79.145.51.53

Q1 [CO3] Configure a static route to LAN_THREE on R_ONE through the Central Switch with an administrative distance of 102. **[3 marks]**

Q2 [CO3] Configure a floating static route on R_ONE to the same network of the previous question. **[3 marks]**

Q3 [CO3] Consider this routing table entry:

CSE421: Computer Networks

Spring 2024

Quiz-5

Section: 8

Marks: 15

Duration: 20 minutes

Name:

ID:

CO1:	CO2:	CO3:	Total:
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s 133.60.0.0/14 [10/0] via 83.68.27.48

How can you identify if this route has been statically configured or not? Write the command for this route. **[1 + 3 marks]**

Q4 [CO3] What type of static route can be seen in Q3 (previous question)? Explain your answer in one sentence. **[2 marks]**

Q5 [CO3] What is the cost of the route configured in Q3? Explain the reasoning behind this cost. **[3 marks]**

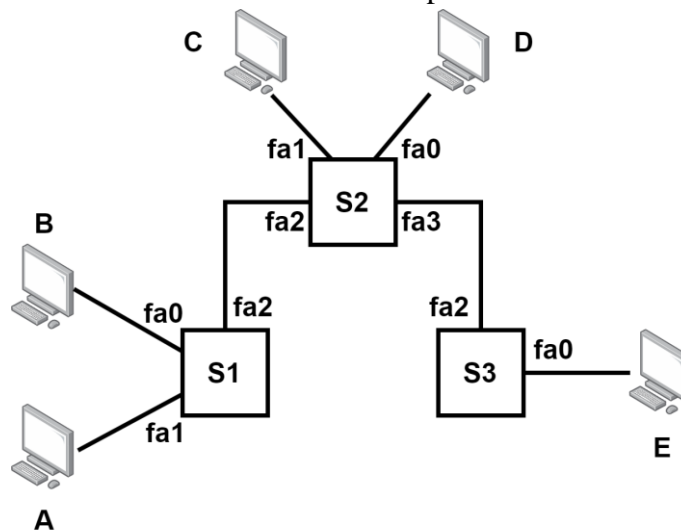
CO1:	CO2:	CO3:	Total:
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Q1 [CO3] Shorten the following full-length IPv6 addresses: **[4 marks]**

- FF10:0010:0000:0A0B:0000:0000:0000:0001 =
- 00AB:AB00:0000:0000:0000:0000:0000:0000 =

Q2 [CO3] Construct a multicast IPv6 address from the MAC address D8-8D-FE-FE-FF-11. Mention the name of the process and show all relevant calculations. **[1 + 3 marks]**

Q3 [CO3] In the network diagram below, letters A-E denote host devices (also consider them as MAC addresses) and S1-S3 are three switches. The respective interfaces are also mentioned.



- A.** If host A wants to send a frame to host C, determine which switches will receive that frame, and what they will do with it. **[2 marks]**
- B.** Continuing from the previous question, suppose host C responds back to host A. Draw the MAC address table of each switch to show their current condition. **[5 marks]**

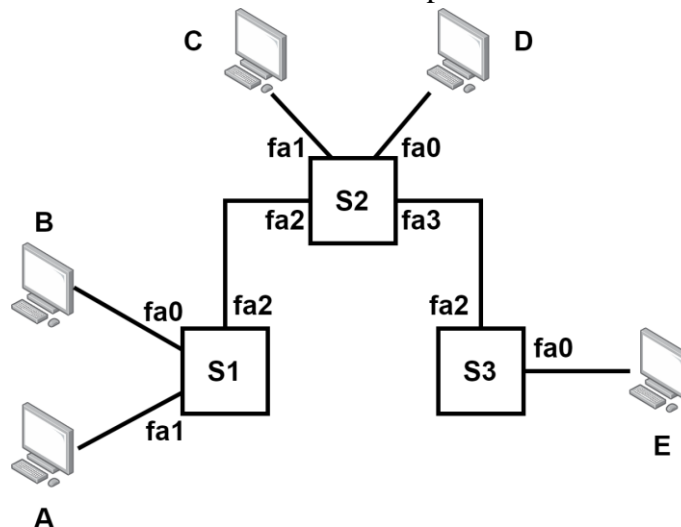
CO1:	CO2:	CO3:	Total:
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Q1 [CO3] Fully extend the following IPv6 addresses: **[4 marks]**

- FF10:10:0:A0B::1 =
- AB:AB00:: =

Q2 [CO3] Suppose, the MAC Address of your PC is A4-02-2C-FE-FF-94. If you wish to assign a unique local unicast IPv6 address to your PC, you can do so using its MAC Address. Determine how it is possible. Show all relevant calculations. **[1 + 3 marks]**

Q3 [CO3] In the network diagram below, letters A-E denote host devices (also consider them as MAC addresses) and S1-S3 are three switches. The respective interfaces are also mentioned.



- Consider that S2 and S3 know the interface that Host E is connected to. Now, if host A wants to send a frame to host E, determine which switches will receive that frame, and what they will do with it. **[2 marks]**
- Continuing from the previous question, suppose host E now sends a frame to host C and it replies back. Draw the MAC address table of each switch to show their current condition. **[5 marks]**