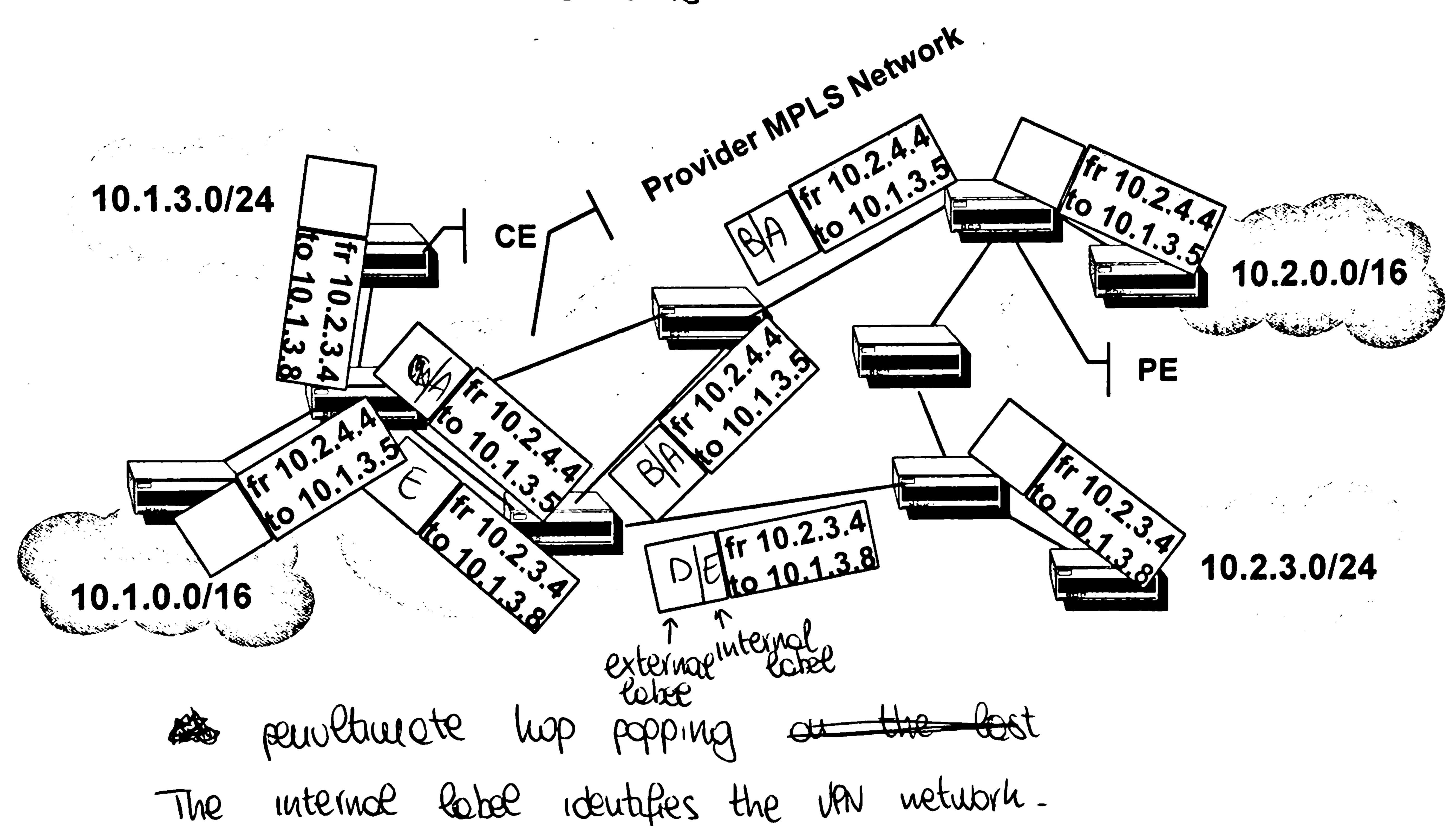
riciping the students to confectly formulate the answers. Please avoid any such request.

Question 1) With reference to the network scenario depicted in the following figure, specify (directly in the boxes in front of packets in the figure) the MPLS labels possibly prepended to each of the packets shown in the figure. (6 points)

There are two UPN wetworks



₽. rence to the IPv6 network depraces and indicate it directly in boxes) the information contain

destination	next-hop			destination	next-hop
12001:1:1/64	2001:1:1:7::2			2001:1:1:1/64	2001:1:1:11:12
2001:1:2/64	2001:1:1:7::2			2001:1:1:2/64	2001:11:10:1
12001:1:1:4/64	2001:1:6:1				2001:1:10:11
1200:1:1:3/64	2001:1:1:5::1			2001:1:1:4/64	2001:1:10:11
		/		2001:1:12:	
		2	201:1:11:2		
2001:	1:1:3/64	:5::H			2001:1:1:1/64
			2001:1:11	::1	
	2001:	1:1:5::2			
	201:1:1:6::2	200	01:11:10!:2		
	2001:1	200	01:11:101:2		
	2001:1:1:6:11			2001:11:8:12	
2001:1:1:4/6	2001:1:1:6:1.4 4 3 2001:	1.1:4:12		20	01:1:1:2/64
	2001:1:1:6:1.4 4 3 2001:		2001:11:11:10:11	20	01:1:1:2/64
2001:1:1:4/6	2001:1:1:6:1.4 4	3001:11:8:11	2001:11:11:10:11	2001:11:8:1	01:1:2/64
2001:1:1:4/6	2001:1:1:6:11 4 2001:	3001:11:8:11	2001:11:11:10:11	2001:11:3:11 dentination	01:1:1:2/64
2001:1:1:4/6 dertination 2001:1:1:1/64	2001:1:1:6:11 2001:1:1:6:11 2001:1:1:8::2	3001:11:8:11	2001: 1: 10:	2001:11:8:11 dentination 2001:1:1:1/64	01:1:2/64
2001:1:1:4/6 destination 2001:1:1:1/64 2001:1:1:7/64	2001:1:1:6:11 2001:1:1:6:11 2001:1:1:8::2 2001:1:1:8::2	3001:11:8:11	2001:11:10:1	2001:11:3:11 dontination 2001:11:1:1/64 2001:11:11:2/64	01:1:1:2/64 next-hop 2001:1:1:10:12 2001:1:1:8:12
2001:1:1:4/6 dertination 2001:1:1:1/64 2001:1:1:7/64 2001:1:1:7/64	2001:1:1:6:1/4 2001:1:1:6:1/4 2001:1:1:8::2 2001:1:1:8::2 2001:1:1:8::2	3001:11:8:11	2001:11:10:1	2001:11:8:11 dentination 2001:1:1:1/64	01:1:1:2/64 next-hop 2001:1:1:10:12 2001:1:1:8:12
2001:1:1:4/6 destination 2001:1:1:1/64 2001:1:1:7/64	2001:1:1:6:11 2001:1:1:6:11 2001:1:1:8::2 2001:1:1:8::2	3001:11:8:11	201:11:10:1	2001:11:3:11 dontination 2001:11:1:1/64 2001:11:11:2/64	01:1:1:2/64 next-hop 2001:1:1:10:12 2001:1:1:8:12
2001:1:1:4/6 dertination 2001:1:1:1/64 2001:1:1:7/64 2001:1:1:7/64	2001:1:1:6:1/4 2001:1:1:6:1/4 2001:1:1:8::2 2001:1:1:8::2 2001:1:1:8::2	3001:11:8:11	201:11:10:1	2001:11:3::1 dentination 2001:1:1:1/64 2001:1:1:2/64 2001:1:1:3/64	01:1:1:2/64 next-hop 2001:1:1:10:2 2001:1:1:8:2

Question 3) Given the following capture file with SIP messages, answer the following questions: (7 points)

- A. Indicate the IP addresses of the caller UA
- B. Indicate the IP address of the called UA.
- C. Knowing that the capture was taken on the interface of one of the systems involved in the message exchange, please indicate which one.
- D. Is record routing enabled? (Please motivate the answer)

Source IP	Destination IP	Protocol	Description	
130.192.18.23	130.192.16.62	SIP/SDP	INVITE SIP:mario@130.192.16.62:7234	
130.192.16.62		SIP	Status: 180 RINGING	
130.192.16.62	130.192.18.23	SIP/SDP	Status: 200 OK	
120.149.210.3	130.192.16.62	SIP/SDP	ACK SIP:mario@130.192.16.62:7234	
130.192.16.62	120.149.210.3	SIP	BYE SIP:lina@120.149.210.3:6734	
120.149.210.3	130.192.16.62	SIP	Status: 200 OK	

- A. 120.149.20.3 (line)
- B. 130.192.16.62 4 (world)
- c. mono scheut interface
- D. No, it is not enabled because from the Ack and beyond the two peers to communicate directly without using any proxy.

Question 4) The employees of a company can connect to their corporate network through a VPN software, which terminates all its traffic on a VPN gateway with address 11.2.1.3. Through that connection, employees have access to all the services available on the corporate network. Concisely describe (best with a drawing) a packet sent from a remote employee's laptop (while the VPN service is in use) and going to a corporate server (IP address 11.3.3.3) captured

- A) On the link connecting the corporate network to the Internet
- B) On the network interface of the server with address 11.3.3.3
- C) On the network interface of the employee's laptop.

Assume a centralized Internet access, the IP address of the client to be 1.2.3.4, while the IP address assigned to the client within the VPN is 11.2.2.5.

Please explicitly show all of the protocol headers deployed and for each of them the content of the fields that play a key role in ensuring proper functioning (e.g., source and destination IP addresses, etc.) (8 points)

