<html><head><style></style></head><body><pre style="word-wrap: break-word; white-space: pre-wrap;">Question 1:

   IP forwarding table of the router 1
   ==

      Netw 1:   98.45.23.00/24   #1
      Netw 2:   98.45.25.00/24   #2

   IP routing table of the router 1
   ==

      Default   98.45.23.254   #1

   IP forwarding table of the router 2
   ==

      Netw 1:   98.45.23.00/24   #1
      Netw 2:   98.45.24.00/24   #2

   IP routing table of the router 2
   ==

      98.45.25.00/24   98.45.23.77   #1
      Default   xx.xx.xx.xx   #3

   98.45.23.15 sends an IP packet to the node 98.45.25.13:

      98.45.25.13 is NOT on the 98.45.23.00/24 network
      Use "default" route in routing table:

                send to: Router 2

   Router 2 will send "ICMP re-direct" to 98.45.23.15

                re-direct   98.45.23.00/24   to Router 1

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Question 2:

   (a) The Ethernet address of the computer lab1a.mathcs.emory.edu

        cheung@lab1a> ifconfig
        eno1   Link encap:Ethernet HWaddr 3c:d9:2b:76:d9:16
                                       ^^^^^^^^^^^^^^^^^^^^^^^^

   (b) The IP address of the computer lab1a.mathcs.emory.edu

        cheung@lab1a> ifconfig
        eno1   Link encap:Ethernet HWaddr 3c:d9:2b:76:d9:16
        inet addr:170.140.151.110
                  ^^^^^^^^^^^^^^^

   (c) The IP forwarding table of the computer lab1a.mathcs.emory.edu

       cheung@lab1a> ip route
       170.140.150.0/23 dev eno1   (Ethernet)

   (d) The IP routing table of the computer lab1a.mathcs.emory.edu

       cheung@lab1a> ip route
</pre></body></html>

default via 170.140.150.254

(e) The Ethernet address of the computer 170.140.150.1

ping 170.140.150.1
arp -n

170.140.150.1 ether 00:03:ba:72:e3:4d

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Question 3:

(a) Show the IP packet that host A will send.

Src IP addr = 33.33.33.7
Dest IP addr = 44.44.44.7
Data = Hello

(b) A will arp its default router:

ARP(33.33.33.1)

(b) Show the IP packet that host A will send.

A will send this IP packet:

Src IP addr = 33.33.33.7
Dest IP addr = 192.169.2.5
Data = Hello

ENCAPSULATED (tunnel field = 1) inside this IP packet:

Src IP addr = 33.33.33.7
Dest IP addr = 44.44.44.7

(b) A needs to send packet to 44.44.44.7
So A will arp its default router

ARP(33.33.33.1)

Next node to receive IP packet: 33.33.33.1
</pre></body></html>