Rajat Sethi – ECE 4380 – HW 7

1a.) Deliver packet directly over interface 0

1b.) Forward packet to R2

1c.) Forward packet to R4

1d.) Forward packet to R3

1e.) Forward packet to R4

2a.)

Dept A: 255.255.255.0/24

Dept B: 255.255.255.128/25

Dept C: 255.255.255.192/26

Dept D: 255.255.255.224/27

2b.) If Dept D grows to 34 hosts, then the organization can try to get another Class-C block and allocate more addresses to D.

3.)

LAN A remains the same.

LAN B takes on the subnet mask: 255.255.255.192

LAN E takes on the subnet number: 128.96.34.192 and subnet mask: 255.255.255.192

R3 assigns the IP Address: 128.96.34.193.

LAN B can now only take addresses between 128-191

LAN E takes addresses between 192-255

4a.)

 Frame 1: H2 ARP-Query broadcast on LAN for R1

 Frame 2: R1 ARP-Reply to H2 with R1's MAC Address

 Frame 3: H2 sends packet to R1.

Frame 4: R1 ARP-Query for R2

Frame 5: R2 ARP-Reply to R1

Frame 6: R1 sends packet to R2.

Frame 7: R2 ARP-Query: Broadcast LAN for H3

Frame 8: H3 ARP-Reply: to R2 with H3's MAC Address

Frame 9: R2 sends IP Packet to H3

4b.) ICMP-Redirect sends a message from R1 back to H2 that it should send the package to R2 instead. H2 then adds this new route to the forwarding table.

5a.) H5 can send a packet to H3

5b.) H5 cannot send a packet to H2

5c.) H5 cannot send a packet to the rest of the internet

6a.) DHCP will probably fail to work, as the overlapping servers will both receive IP configurations not meant for them.

6b.) ARP will not be affected by such sharing.

7a.) B

7b.) A

7c.) E

7d.) F

7e.) C

7f.) D

8.)

Network Number / Mask Length	Next Hop
Default	C