Rafeeq Wilson

R7. In the shadow copy forwarding lookup is made locally and each input, not invoking the centralized processor. A non-centralized method ignores making a lookup" processing bottleneck" at a single point in the router.

R8. Changing the memory, changing within a bus changing in interconnection network. A interconnection network is able to forward packets parallel and as long as all the packets are being forwarded to similar output ports.

R12. Yes, one address for all the interfaces.

R14. DHCP: range 192.168.1.150 168.1.200
IP: 192.168.1.160
Network mask: 255.255.255.0
Default router:168.1.254
DNS server: 192.168.1.1, 192.168.1.2

R19. IPv6 is with a fixed length header and does not have all of the options the a IPv4 header can. However, a IPv6 header has two 128 bit addresses "source and destination IP address" the entire header has a fixed length of 40 bytes. Still, a lot of the fields are the same.For example: payload length,Traffic class, next header and hop limit in IPv6 are a lot alike: type of service, datagram length, upper-layer protocol and time and are in IPv4.

R25. The OSPF is a router that can broadcasts routing information to other routers in the AS and no only its neighboring routers. The information sent by the router has one an entry for each of the router's neighbors: An entrance permit the space from the router to the neighbor. A RIP advertisement sent has information about all the networks in the AS.

R29. A subnet is part larger network. It does not have a router, it has terrorities that are made by the router and host interfaces. A network piece of the CDIRized address, it is written in the form a.b.c.d/x. The perfix handles one or multipale subnets. When a router advertises a prefix across a BGP session, it has the prefix a number of BGP attributes. In BGP jargon, a prefix along with its attributes is a BGP route.

P7.

a. The datagram: case of connection-oriented, router failure has a router with that connection. At the very least it will need the router that is upstream of the unsuccesful router to give a new downstream path of the destination node, with all of the needed signaling involved in creating a path. The case of connectionless datagram, no signaling is needed to set up a new downstream path or take down the old downstream path.

b. VC: For a router to maintain an available fixed capacity on the path between the source and destination node for that source-destination; it would have to know the characteristics

of the traffic from all sessions passing through the called link. This is possible in a connection-oriented network, but not with a connectionless network. This means that the connection-oriented VC network would be a better option.

c. In datagram architecture has more control traffic overhead because the different packet headers has to route the datagrams through the network.

P10.

a. Prefix Match 11100000 00, Link Interface 0.
Prefix Match 11100000 01000000, Link Interface 1.
Prefix Match 11100001, Link Interface 2.
Prefix Match 11100000 01000001, Link Interface 2.
Otherwise 3.

b. Prefix match for first address is 5th entry: link interface 3.
Prefix match for second address is 3nd entry: link interface 2.
Prefix match for third address is 4th entry: link interface 3.

P11.

Destination Address Range	**Link Interface**
00000000 – 00111111	0
01000000 – 01011111	1
01100000 – 01111111	2
10000000 – 10111111	2
11000000 – 11111111	3

Number of addresses for interface 0 = 2^6 =64.
Number of addresses for interface 1 = 2^5 =32.
Number of addresses for interface 2 = 2^5 +2^6 =32+64 =96.
Number of addresses for interface 3 = 2^6 =64.

P13. 223.1.17.0/26
223.1.17.128/25
223.1.17.192/28

P20. MP3 file size = 5 million bytes. The data is carried in TCP segments, with each TCP segment also a 20 bytes of header. Then each datagram can have 1500-40=1460 bytes of the MP3 file number of datagrams required is (5×10^6) / 1460 = 3425.

All but the last datagram will be 1,500 bytes.
The last datagram will be 960+40 = 1000 bytes.

P21.

a. Host interfaces: 192.168.1.1, 192.168.1.2, 192.168.1.3. Router interface: 192.168.1.4.

b. NAT translation table:

WAN Side	**LAN Side**
24.34.112.235, 4000	192.168.1.1, 3345
24.34.112.235, 4001	192.168.1.1, 3346
24.34.112.235, 4002	192.168.1.2, 3445
24.34.112.235, 4003	192.168.1.2, 3446
24.34.112.235, 4004	192.168.1.3, 3547
24.34.112.235, 4005	192.168.1.3, 3548

P22.

a. All IP packets are sent outside this mean that the packet sniffer to save all IP packets made by the hosts behind a NAT. When each host makes a sequence of IP packets with sequential numbers and a unique identification number. The group IP packets with consecutive IDs into a cluster. The number of clusters is the number of hosts behind the NAT.

b. If the identification numbers are not sequentially given and technique that should be used in part cannot work because as there won't be clusters in sniffed data.