P1. A.

Dest. Address:	Interface:
H3	Link interface 3

B. For A, only one forwarding rule exists, therefore creating a table with two different routes for the same destination address is not possible. A can have an entry to H3 through the link interface3 or interface4, but not both.

P5. A.

Prefix Match	Link Interface
11100000 00	0
11100000 01000000	1
1110000	2
11100001 1	3
otherwise	3

B. First address: 5th entry -> link interface3
Second address: 3rd entry -> link interface2
Third address: 4th entry -> link interface3

P8.
Subnet 2: 90 + 2(net + broad) = 128 -> 223.1.17.00000000/25 = 223.1.17.0 to 223.1.17.127
Subnet 1: 60 + 2 (net + broad) = 64 -> 223.1.17.10000000/26 = 223.1.17.128 to 223.1.17.191
Subnet 3: 12 + 2(net + broad) = 16 -> 223.1.17.11000000/28 = 223.1.17.192 to 223.1.17.207

P10.

Prefix Match	Link Interface
11100000 00(224.0.0.0/10)	0
11100000 01000000(224.64.0.0/16)	1
1110000(224.0.0.0/8)	2
11100001 1(225.128.0.0/9)	3
otherwise	3

P.13

University	Net Range	CIDR
WSU	216.186.41.32 - 216.186.41.39	192.94.22.0/24
UofI	192.103.6.0 - 192.103.6.255	192.103.6.0/24

The whois service cannot determine the location of an IP address (accurately).

IP Address	Country Code	Location	Postal Code	Approximate Coordinates*	Accuracy Radius	ISP	Organization	Domain	Metro Code
192.94.22.0	US	Pullman, Washington, United States, North America	99164	46.7313, -117.1796	5	Washington State University	Washington State University	wsu.edu	881

IP Address	Country Code	Location	Postal Code	Approximate Coordinates*	Accuracy Radius	ISP	Organization	Domain	Metro Code
192.103.6.0	US	Moscow,Idaho, United States, North America	83844	46.7324, -117.0002	5	University of Idaho	University of Idaho	uidaho.edu	881

P16. A. Home addresses: 192.168.1.1, 192.168.1.2, 192.168.1.3; router interface: 192.168.1.4
B.

WAN Side	**LAN Side**
24.34.112.235, 400	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, 3545
24.34.112.235, 4005	192.168.1.3, 3546

P3.

Step	N’	D(t), p(t)	D(u), p(u)	D(v), p(v)	D(w),p(w)	D(y), p(y)	D(z), p(z)
0	x	inf	inf	3,x	6,x	6,x	8,x
1	xv	7,v	6,v	3,x	6,x	6,x	8,x
2	xvu	7,v	6,v	3,x	6,x	6,x	8,x
3	xvuw	7,v	6,v	3,x	6,x	6,x	8,x
4	xvuwy	7,v	6,v	3,x	6,x	6,x	8,x
5	xvuwyt	7,v	6,v	3,x	6,x	6,x	8,x
6	xvuwytz	7,v	6,v	3,x	6,x	6,x	8,x

P6. At each iteration, a node exchanges distance tables with its neighbors. Let d be the diameter of the network (length of longest path without loops). After d-1 iterations, all nodes will know the shortest path cost of d or fewer ‘hops’ to all other nodes. Since any path with greater than d hops will have loops, the algorithm will converge at most d-1 iterations.

P14. A. eBGP
B. iBGP
C. eBGP
D. iBGP

P15. A. I1 since this interface begins the least cost path from 1d towards gateway router 1c.
B. Both routes have the same AS-PATH length, but I2 begins path that has closest NEXT-HOP router.

C. I1 begins the path that has the shortest AS-PATH