ECE358 Final F2016

1.

A) 7
B) 8
C) 9
D) 2
E) 11
F) 3
G) 4
H) 12
I) 14
J) 13

2.

1) Forward on interface 1 with TTL=4
2) Discard packet, send ICMP to sender
3) Discard packet, no match
4) Forward on interface 4 with TTL=4
5) Forward on interface 3 with TTL=4
6) Discard packet, send ICMP to sender

131 . 0001/
131 . 0001 11/
131.19/
131 . 0001 011/
192.97.124.
192.24 . 00/
192.24 . 0000 11/

3.

Network	Dotted decimal notation	Binary notation
A	172.1.4.0/25	**10101100 00000001 00000100 0**0000000
B	172.1.5.0/24	**10101100 00000001 00000101** 00000000
C	172.1.6.0/24	**10101100 00000001 00000110** 00000000
D	172.1.7.0/24	**10101100 00000001 00000111** 00000000
E	172.1.4.128/25	**10101100 00000001 00000100 1**0000000
Answer	172.1.4.0/22	**10101100 00000001 00000**100 00000000

4.

Multiple answers possible

A) 192.168.144.0/21
B) 192.168.152.0/22
C) 192.168.156.0/22

5. Multiple possible solutions

Network	# Hosts	Block size (# bits)	Network ID	Prefix length	Broadcast address
A	30	32 (5 bits)	192.168.10.128 [100/]	27	192.168.10.159
B	10	16 (4 bits)	192.168.10.160 [1010/]	28	192.168.10.175
C	12	16 (4 bits)	192.168.10.176 [1011/]	28	192.168.10.191
D	2	4 (2 bits)	192.168.10.240 [111100/]	30	192.168.10.243
E	2	4 (2 bits)	192.168.10.244 [111101/]	xxx	xxxxxxxxxxxxxx
F	2	4 (2 bits)	192.168.10.248 [111110/]	xxx	xxxxxxxxxxxxxx
G	12	16 (4 bits)	192.168.10.192 [1100/]	xxx	xxxxxxxxxxxxxx
H	60	64 (6 bits)	192.168.10.0 [00/]	xxx	xxxxxxxxxxxxxx
I	14	16 (4 bits)	192.168.10.208 [1101/]	xxx	xxxxxxxxxxxxxx
J	60	64 (6 bits)	192.168.10.64 [01/]	xxx	xxxxxxxxxxxxxx
K	8	16 (4 bits)	192.168.10.224 [1110/]	Xxx	xxxxxxxxxxxxxx

00
01
100

1010
1011

1100
1101

1110
1111

6.

	OSPF		**RIP**	
Destination	**Next hop**	**Cost**	**Next Hop**	**Cost**
A	d	12	d	3
B	d	11	d	2
C	d	11	d	2
D	a	10	a	1
E	b	20	b	2
F	b	20	b	2
G	d	22	g	2
H	d	12	g	2

7.

a) When a BGP router receives an advertisement, it contains the AS's the advertisement has gone through. If this path contains the current AS, the current AS discards the advertisement.
b) AS2 does not advertise any AS2-AS3- paths to AS1. AS2 does not advertise any AS2-AS1- paths to AS3.

8.

a) [1,6], [23,26]
b) [6,16], [17,22]
c) Triple duplicate ACK
d) Timeout
e) 32
f) 21
g) 13
h) 7
i) 4

9.

a) 29
b) 1+2+4+8+16+32+33+34+35+36 = 201 MSS
   100*10 = 1000ms = 1s
   2.48Mbps
c) 45MSS/RTT = 5.472Mbps

10. [not covered]