**Northampton Community College**
**CISC 231 – Data Communications and LANs (CCNA 1)**
**STUDY GUIDE FOR CHAPTER 6**

1. Complete the address chart that follows.

| Address Class | First Octet Range | Number of Possible Networks | Number of Hosts Per Network |
|---|---|---|---|
| Class A | | | |
| Class B | | | |
| Class C | | | |

2. What addresses in IPv4 are reserved?

3. What are private addresses? State the private address ranges for each class.

4. What is a subnet?

5. What identifies the subnet?

6. Who creates a subnet?

7. How does a host obtain an IP address? Describe three methods.

8. What is NAT?

9. How is an IP address represented?

10. What are the prefixes for the following subnet masks?
    a. 255.255.255.0        = _____
    b. 255.255.254.0        = _____
    c. 255.255.240.0        = _____
    d. 255.255.255.248      = _____
    e. 255.224.0.0          = _____

11. Identify the following addresses as either a broadcast, subnet, or valid host address:
    a. 192.168.1.128/27     = _____
    b. 192.168.16.63/28     = _____
    c. 172.16.32.255/19     = _____

12. What logical process does a router perform on a network address and its subnet mask?


13. Does a gateway address for a given host need to be in the same subnet for that host?  Why or why not?



14. What network devices are assigned a static ip address?  Identify at least three.



15. How does IPv6 differ from IPv4?



16. How many bits are in an IPv4 address?     An IPv6 address?



17. Why are we moving to IPv6?  What are its benefits?



18. What is ICMP?  Describe some of its characteristics.



19. What will happen if a router receives an ICMP packet which has a TTL value of 1 and the destination host is several hops away?

Kevin Manna