Name: _____   **Date:**_____

Northampton Community College
CISC271 – CCNA 3 & 4 – WANs and Security
Chapter 2 - Study Guide

1. Explain how time-division multiplexing works.

2. What is a demarcation point?

3. List some of the layer 1 serial interface standards. Identify some of the bit rates of each.

4. What is the advantage of using serial communication over parallel communication?

5. What is the default encapsulation type on Cisco serial interfaces?

6. If using mixed vendor routers, which L2 protocol(s) would you use and why? Do you need to change the Cisco default protocol for serial interface?

7. What is LCP? Describe what it does.

8. What are the optional parameters for LCP?

9. What is NCP?

10. What are the authentication types available for PPP? Describe each?

11.
```
Router#  show interface  serial0/0
Serial0/0 is up, line protocol is up
  Hardware is HD64570
  Internet address is 10.140.1.2/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255
  Encapsulation PPP, loopback not set, keepalive set (10 sec)
  LCP Open
  Open: IPCP, CDPCP
  38097 packets output, 2135697 bytes, 0 underruns
  0 output errors, 0 collisions, 6045 interface resets
  0 output buffer failures, 0 output buffers swapped out
  482 carrier transitions
  DCD=up  DSR=up  DTR=up  RTS=up  CTS=up
```

Given the above output:
   a. What is the bandwidth on the interface?
   b. What is the L2 protocol?
   c. Is the link operational?
   d. How many NCPs are installed?
   e. Have their been any L1 issues on the interface?
   f. Is subnetting being utilized?

12. What command will allow you to see real time output of the PPP negotiation process?

13. What advantages does PPP have over HDLC?

14. What problems could be indicated with a "line up, protocol down" output?

15. List the commands required to configure a router for CHAP authentication in PPP.

16. Identify the following optional configuration functions with PPP. What command would configure each?
   a. Compression

   b. Link quality