Brooklyn College, CIS Dept, CISC 7332X
Midterm Exam

Name: _____

Section: _____ Id.: _____

(*Each question is worth 5 points. You get 1 point for leaving an answer blank. You get no points for a wrong answer.*)

1. (5 pts) The correct order of OSI model layers is:
   a. Application, Presentation, Transport, Session, Network, Data Link, Physical
   b. Application, Presentation, Session, Transport, Network, Data Link, Physical
   c. Application, Presentation, Session, Network, Transport, Data Link, Physical
   d. Application, Presentation, Data Link, Transport, Network, Session, Physical

2. (5 pts) The MAC layer is responsible for:
   a. Routing.
   b. Dealing with collissions.
   c. Converting ASCII to EBCDIC.
   d. End to end error correction.

3. (5 pts) Slotted ALOHA improved:
   a. Latency Time.
   b. Propagation Time.
   c. Vulnerable Time.
   d. Frame Time.

4. (5 pts) ALOHA used:
   a. Sliding Window ARQ
   b. Go back N
   c. Stop and wait
   d. None of the above

5. (5 pts) In Sliding Window ARQ, selective reject NAK:
   a. Acknowledges everything prior to NAK.
   b. Rejects all messages prior to NAK.
   c. Selectively rejects all messages following NAK.
   d. Ends the transmission.

6. (5 pts) Frequency Division Multiplexing is applicable when:
    a. Carrier data rate exceeds that of our signal.
    b. Signal to Noise ratio is lower.
    c. Carrier bandwidth exceeds that of our signal.
    d. Carrier wavelength propagation delay is lower.

7. (5 pts) Time Division Multiplexing is applicable when:
    a. Carrier data rate exceeds that of our signal.
    b. Signal to Noise ratio is lower.
    c. Carrier bandwidth exceeds that of our signal.
    d. Carrier wavelength propagation delay is lower.

8. (5 pts) On a bus network,
    a. devices connect using a passive interface.
    b. devices amplify the signal for retransmission.
    c. LLC layer handles CSMA/CD
    d. all of the above

9. (5 pts) Ring network,
    a. devices connect using a passive interface.
    b. devices amplify the signal for retransmission.
    c. LLC layer handles CSMA/CD
    d. all of the above

10. (5 pts) Length of an Ethernet network is primarily limited by:
    a. data rate
    b. packet size
    c. CSMA/CD
    d. all of the above

11. (5 pts) For Ethernet 10, the maximum length of the lan is closer to:
    a. 5km
    b. 500km
    c. 50m
    d. 500m

12. (5 pts) For Gigabit Ethernet operating in half-duplex mode, the maximum length of the lan is closer to:

    a. 5km
    b. 500km
    c. 50m
    d. 500m

13. (5 pts) For Fast Ethernet, the CSMA/CD happens during first N of each frame. What is N?

    a. 512 microseconds
    b. 51.2 microseconds
    c. 5.12 microseconds
    d. 0.512 microseconds

14. (5 pts) If bandwidth is 6Mhz, and SNR is 3, capacity of the channel closer to:

    a. 2Mbps
    b. 6Mbps
    c. 12Mbps
    d. 24Mbps

15. (5 pts) If bandwidth is 6Mhz, and SNR is 3, how many voltage levels are required to achieve maximum capacity

    a. 1
    b. 2
    c. 4
    d. 8

16. (5 pts) We are transmitting data at 100W, and detect only 90W when recieving, attenuation in decibels is closer to:

    a. -2.0
    b. -1.5
    c. -1.0
    d. -0.5

17. (5 pts) The purpose of a mask in a routing table is:

    a. To get host address.
    b. To get network address.
    c. To get source address.

d. To get network interface.

18. (5 pts) The Data-Link layer is responsible for:

    a. Routing
    b. Name resolution
    c. Point to Point transmission
    d. Pinging

19. (5 pts) Network switches operate at:

    a. Network layer
    b. Data Link Layer
    c. Session Layer
    d. Physical Layer

20. (5 pts) Routers operate at:

    a. Network layer
    b. Data Link Layer
    c. Session Layer
    d. Physical Layer

21. **(5 pts) EXTRA CREDIT:** We are transmitting data at a rate of 1000 bits per second. During transmission, the noise introduces errors so that, on average, 5% of bits are received incorrectly (i.e.: a 0 as 1, or 1 as 0). What is the maximum error free capacity of this channel?