Data Communication and Networking Midterm

Name: ID: Class:

1. As frequency increases, the period \_\_\_\_\_\_\_\_.

A) decreases B) increases

C) remains the same D) None of the choices are correct

2. \_\_\_\_\_\_\_\_ is a type of transmission impairment in which the signal loses strength due to the resistance of the transmission medium.

A) Attenuation B) Distortion C) Noise D) Decibel

3. \_\_\_\_\_\_\_\_ is a type of transmission impairment in which the signal loses strength due to the different propagation speeds of each frequency that makes up the signal.

A) Attenuation B) Distortion C) Noise D) Decibel

4. \_\_\_\_\_\_\_\_ is a type of transmission impairment in which an outside source such as crosstalk corrupts a signal.

A) Attenuation B) Distortion C) Noise D) Decibel

5. When propagation speed is multiplied by propagation time, we get the \_\_\_\_\_\_\_\_.

A) throughput B) wavelength of the signal

C) distortion factor D) distance a signal or bit has traveled

6. In \_\_\_\_\_, the level of the voltage determines the value of the bit.

A) NRZ-I B) NRZ-L C) NRZ-I or NRZ-L D) None of the choices are correct

7. In \_\_\_\_\_\_, the change or lack of change in the level of the voltage determines the value of the bit.

A) NRZ-I B) NRZ-L C) NRZ-I or NRZ-L D) None of the choices are correct

8. The idea of RZ and the idea of NRZ-L are combined into the \_\_\_\_\_\_\_\_ scheme.

A) Manchester B) differential Manchester

C) Manchester or differential Manchester D) None of the choices are correct

9. The idea of RZ and the idea of NRZ-I are combined into the \_\_\_\_\_\_\_\_ scheme.

A) Manchester B) differential Manchester

C) Manchester or differential Manchester D) None of the choices are correct

10. In Manchester and differential Manchester encoding, the transition at the middle of the bit is used for \_\_\_\_\_\_\_\_\_\_.

A) bit transfer B) baud transfer

C) synchronization D) None of the choices are correct

11. In QAM, both \_\_\_\_\_\_\_\_ of a carrier frequency are varied.

A) frequency and amplitude B) phase and frequency

C) amplitude and phase D) None of the choices are correct

12. In \_\_\_\_\_\_\_\_, the amplitude of the carrier signal is varied to create signal elements. Both frequency and phase remain constant.

A) ASK B) PSK C) FSK D) QAM

13. In \_\_\_\_\_\_\_\_\_, the frequency of the carrier signal is varied to represent data. Both peak amplitude and phase remain constant.

A) ASK B) PSK C) FSK D) QAM

14. In \_\_\_\_\_\_\_\_, the phase of the carrier is varied to represent two or more different signal elements. Both peak amplitude and frequency remain constant.

A) ASK B) PSK C) FSK D) QAM

15. Quadrature amplitude modulation (QAM) is a combination of \_\_\_\_\_\_\_\_\_\_\_.

A) ASK and FSK B) ASK and PSK C) PSK and FSK

16. \_\_\_\_\_\_\_\_ is the set of techniques that allows the simultaneous transmission of multiple signals across a single data link.

A) Demodulating B) Multiplexing C) Compressing

17. \_\_\_\_ is designed to use the high bandwidth capability of fiber-optic cable.

A) FDM B) TDM C) WDM D) None of the choices are correct

18. \_\_\_\_\_\_ is an analog multiplexing technique to combine optical signals.

A) FDM B) TDM C) WDM D) None of the choices are correct

19. \_\_\_\_\_ is a digital process that allows several connections to share the high bandwidth of a link.

A) FDM B) TDM C) WDM D) None of the choices are correct

20. We can divide \_\_\_\_ into two different schemes: synchronous or statistical.

A) FDM B) TDM C) WDM D) None of the choices are correct

21. Which of the following is not an unguided medium?

A) twisted-pair cable B) coaxial cable

C) fiber-optic cable D) None of the choices are correct

22. Twisting in a twisted-pair help reduce the \_\_\_\_\_\_\_\_\_\_.

A) length B) cost C) noise D) None of the choices are correct

23. Noise in a coaxial cable is reduced by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A) twisting the cable B) the outer conductor

C) the inner conductor D) None of the choices are correct

24. UTP and STP are different implementations of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cable.

A) twisted-pair B) coaxial C) fiber-optic

25. RJ-45 is a type of connectors used in \_\_\_\_\_\_\_\_\_ cabling.

A) twisted-pair B) coaxial C) fiber-optic D) None of the choices are correct

26. In a datagram network, the destination address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A) remains the same from the source to the destination

B) changes at each switch C) changes at the destination

D) None of the choices are correct

27. In a datagram network, we need \_\_\_\_\_\_\_\_\_\_\_\_\_\_ phase(s).

A) tear-down B) setup

C) setup and tear-down D) None of the choices are correct

28. In a virtual-circuit network, we need \_\_\_\_\_\_\_\_\_\_\_\_\_\_ phase(s).

A) tear-down B) setup C) setup and tear-down

29. In a \_\_\_\_\_\_\_\_\_\_network, all packets in a message follow the same path.

A) datagram B) virtual-circuit

C) circuit-switched D) None of the choices are correct

30. In a \_\_\_\_\_\_\_\_\_\_network, each packet in a message may follow a different path.

A) datagram B) virtual-circuit

C) circuit-switched D) None of the choices are correct

31. If the sender is a host and wants to send a packet to another host on another network, the logical address that must be mapped to a physical address is \_\_\_\_\_\_.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) the source IP address D) None of the choices are correct

32. The sender is a router that has received a datagram destined for a host on another network. The logical address that must be mapped to a physical address is \_\_\_\_\_\_.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) the source IP address D) None of the choices are correct

33. The sender is a router that has received a datagram destined for a host in the same network. The logical address that must be mapped to a physical address is \_\_\_\_\_\_.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) source IP address D) None of the choices are correct

34. An ARP reply is normally \_\_\_\_\_\_\_.

A) broadcast B) multicast C) unicast D) None of the choices are correct

35. An ARP request is normally \_\_\_\_\_\_\_.

A) broadcast B) multicast C) unicast D) None of the choices are correct

36. If the ASCII character H is sent and the character L is received, what type of error is this?

A) Burst B) Recoverable C) Single-bit D) Multiple-bit

37. In cyclic redundancy checking, what forms the check bits?

A) The remainder B) The divisor C) The quotient D) The dividend

38. In CRC, if the dataword is 111111, the divisor 1010, and the remainder 110, what is the codeword at the receiver?

A) 111111011 B) 1010110 C) 111111110 D) 110111111

39. In CRC, if the dataword is 111111 and the divisor 1010, what is the dividend at the sender?

A) 1111110000 B) 111111000 C) 111111 D) 1111111010

40. At the CRC generator, \_\_\_\_\_\_\_ is (are) added to the dataword after the division process to create the codeword.

A) 0’s B) 1’s C) the remainder D) the divisor

41. Which of the following is an example of a controlled-access protocol?

A) CDMA B) FDMA C) Token passing

42. The vulnerable time for a pure ALOHA is \_\_\_\_\_\_\_\_\_\_ the one for slotted ALOHA.

A) less than B) greater than C) equal to

43. The vulnerable time for CSMA is \_\_\_\_\_\_\_\_\_\_\_.

A) Tp B) 2 x Tp C) 3 x Tp D) None of the choices are correct

44. We need RTS and CTS packets in \_\_\_\_\_\_\_\_\_\_\_\_ protocol.

A) CDMA/CA B) CDMA/CD C) token-passing

45. In FDMA, we use different \_\_\_\_\_\_\_\_\_\_\_ to achieve channelization.

A) frequency ranges B) time slots C) codes

46. In the \_\_\_\_\_\_\_ random-access method collision is avoided.

A) CSMA/CD B) CSMA/CA

C) ALOHA D) token-passing

47. In the 1-persistent approach, when a station finds an idle line, it \_\_\_\_\_\_\_.

A) sends immediately B) waits 0.1 s before sending

C) waits 1 s before sending D) waits a time equal to 1 − p seconds before sending

48. \_\_\_\_\_\_\_ requires one primary station and one or more secondary stations.

A) Token ring B) Reservation

C) Polling D) CSMA

49. In the p-persistent approach, when a station finds an idle line, it \_\_\_\_\_\_\_.

A) sends immediately B) waits 1 s before sending

C) sends with probability 1 − p D) sends with probability p

50. The 1-persistent approach can be considered a special case of the p-persistent approach with p equal to \_\_\_\_\_\_\_.

A) 1.0 B) 2.0 C) 0.1 D) 0.5