Computer Networks: Sheet 1

1. HUB is a _____ device and switch is a _____ device.
a) multicast,unicast b) multicast,broadcast c) broadcast,unicast d) broadcast,multicast

2. What is the binary equivalent of the number 368 base 10?
a) 111100000 b) 111010000 c) 101110000 d) 110110000

3. Which of the OSI model is responsible for compression and decompression?
a) Presentation layer b)Ttransport layer c) Application layer d) Session layer

4. Which of the OSI model layer is also known as end-to-end layer?
a) session layer b) presentation layer c) Transport layer d) Network layer

5. Which of the following services use TCP? 1.DHCP 2.SMTP 3.HTTP 4.TFTP 5.FTP
a) 1,2 b) 1,3,4 c) 2,3,5 d) 1,2,3,5

6. You want to implement a mechanism that automates the IP configuration, including IP address, subnet mask, default gateway, and DNS information. Which protocol will you use to accomplish this?
a) RARP b) SNMP c) DHCP d) ARP

7. Which of the following describe the DHCP Discover message?
1. It uses FF:FF:FF:FF:FF:FF as a layer 2 broadcast.
2. It uses UDP as the Transport layer protocol.
3. It uses TCP as the Transport layer protocol.
4. It does not use a layer 2 destination address.
a) 1, 2 b) 1,4 c) 2,4 d) 3,4

8. Which of the following allows a router to respond to an ARP request that is intended for a remote host?
a) Gateway b) Reverse ARP c) Proxy ARP d) Inverse ARP

9. Which class of IP address provides a maximum of only 254 host addresses per network ID?
a) Class A b) Class B c) Class C d) Class D

10. Which statements are true regarding ICMP packets?
1. They acknowledge receipt of a TCP segment.
2. They guarantee datagram delivery.
3. They can provide hosts with information about network problems.
4. They are encapsulated within IP datagrams.
a) 1, 2 b) 2, 3 c) 3, 4 d) 2, 3, 4

11. What protocol is used to find the hardware address of a local device?
a) ARP b) RARP c) IP d) ICMP

12. What is the address range of a Class B network address in binary?
a) 01xxxxxx b) 10xxxxxx c) 11xxxxxx d) 110xxxxx

13. In networking terminology UTP means:
a) Unshielded Twisted Pair b) Ubiquitious Teflon port
c)Uniformly Terminating port d) Unshielded T-connector port

14. How many acknowledgements are needed in stop-and-wait flow control protocol to send n packets?
a) 2n -1 b) n-1 c) 2n d) n

15. Which of the following is possible in a token passing bus network ?
a) in-service expansion b) unlimited number of stations
c) both (a) and (b) d) unlimited distance

16. Working of the WAH generally involves:
a) telephone lines b) micro waves c) satellites d) all of these

17. Maximum segment size for twisted pair, fibre optics and thick coax is:
a) 100,2000,500 b) 100,200,500 c) 2000,500,100 d) 500,100,200

18. Unmodulated signal coming from a transmitter is known as:
a) carrier signal b) baseband signal c) primary singal d) None of these

19. Frequency range at which the land coaxial cables are used, is:
a) 106 to 108 Hz b) 1010 to 1011 Hz c) 103 to 104 Hz d) None of these

20. The monitor station in what standard ensures that one and only one token is circulating ?
a) 802.3 b) 802.5 c) Both (a) and (b) d) All of these

21. What can happen at a Token Ring station ?
a) Examination of the destination address b) Regeneration of the frame
c) Passing of the frame to the next station d) All of these

22. Which of the following is not a transceiver function?
a) Transmission and receipt of data b) Checking of line voltages
c) Addition and subtraction of headers d) Collision detection

23. Which of the given below houses the switches in Token Ring ?
a) NIC b) MAU c) Nine-pin connector d) Transceiver

24. To interface a computer terminal with a modem, required physical layer standard is
a) RS 424 - A b) RS 232 - C c) RS 449 d) Either (b) or (c)

25. A 100 km long cable runs at the T1 data rate. The propagation speed in the cable is half the speed of light. How many bits is in the cable ?
a) 572 b) 672 c) 772 d) 873

26. How much bandwith is there in 0.1 micron of spectrum at a wavelength of 1 micron ?
a) 20,000 GHz b) 25,000 GHz c) 30,000 GHz d) None of these

27. How many digits of the network user Address are known as the DNIC (Data Network Identiication Code) ?
a) First three b) First four c) First five d) First seven

28. How many digits of the DNICC (Data Network Identiication Code) identify the country ?
a) First three b) First four c) First five d) First six

29. Which of the following digits are known as the area code of the network user address (NUA) ?
a) 5-7 b) 1-4 c) 8-12 d) 13-14

30. Which of the following digits are known as the terminal number of the network user address?
a) 5-7 b) 1-4 c) 8-12 d) 13-14

31. Four bits are used for packed sequence numbering in a sliding window protocol used in a computer network. What is the maximum window size ?
a) 4 b) 8 c) 15 d) 16

32. Slotted ALOHA:
a) divide time into discrete intervals b) require global time synchronization
c) both (a) and (b) d) none of these

33. In the carrier sense network, if prevailing condition is a 'channel busy', then technique used is:
a) non-persistent then it results in randomised wait and sense
b) 1-persistent then the channel is continually sensed
c) p-persistent then randomised retransmission is done
d) both (a) and (b)

34. Number of cross point needed for 10 lines in a cross point switch which is full duplex in nature and there are no self-connection is:
a) 100 b) 45 c) 8 d) 28

35. If data rate of ring is 20 Mbps, signal propagation speed is 200 b/ms, then number of bits that can be placed on the channel of 200 km is
a) 2000 bits b) 20,000 bits c) 1,000 bits d) none of these

36. In which ARQ, when a NAK is received, all frame sent since the last frame acknowledged an retransmitted:
a) stop-and-wait b) go-back-n c) selective-reject d) both (a) and (b)

37. Adaptive or dynamic directory used in packet routing changes:
a) within each user session b) with each user session
c) at system generation time only d) none of these

38. Maximum data rate of a channel of 3000 Hz bandwidth and SNR of 30 dB is:
a) 75,000 bps b) 60,000 bps c) 30,000 bps d) 3,000 bps

39. A 3000 Hz bandwidth noisy channel transmits bits with a signal to thermal noise ratio of 30 dB. What is the maximum data rate of the channel ?
a) 30 kbps b) 00 kbps c) 60 kbps d) none of these

40. In stop-and-wait ARQ, if data 1 has an error, then receiver sends which frame ?
a) NAK 0 b) NAK 1 c) NAK 2 d) NAK

41. In which communication, poll/select method used to determine control of the line ?
a) peer-to-peer b) peer-to-primary c) primary-to-peer d) primary-to-secondary

42. The secondary device in a multipoint configuration sends data in response to which of the following event ?
a) ACK b) ENQ c) Poll d) Sel

43. For stop-and-wait flow control, for n data packets sent, how many acknowledgments are needed ?
a) n b) n-1 c) 2n d) n + 1

44. In a crossbar with 1000 crosspoints, how many statistically are in use at any time ?
a) 100 b) 250 c) 500 d) 1000

45. Which of the following decides the role (sender or receiver) of a device on a network ?
a) Line connection b) Link connection c) Line discipline d) Link decision

46. A terminal multiplexer has six 1200 bps terminals and (rf 300 bps terminals connected to it. The outgoing line is 9600 bps. What is the maximum value of n?
a) 4 b) 16 c) 8 d) 28

47. Maximum data rate of a noiseless 4 kHz channel using T1 PCM system is:
a) 32 kbps b) 56 kbps c) 80 kbps d) 24 kbps

48. Poll/select line discipline requires what to identify the packet recipient ?
a) Timer b) Buffer c) Address d) Dedicated line

49. For a sliding window of size n-1 (n sequence numbers), there can be maximum of how many frames sent but unacknowledged ?
a) 0 b) n -1 **c)** N d) n +1

50. How many crosspoints are needed in a single-stage switch with 40 inputs and 50 outputs ?
a) 40 b) 90 c) 50 d) 2000

51. The number of cross-points needed for 10 lines in a cross-point switch which is full duplex in nature and there are no self connection, is:
a) 100 b) 45 c) 50 d) 90

52. Two networks each provide reliable connection-oriented service. One of them offers a reliable byte stream and the other offers a reliable message stream. A process writes 1024 bytes, then:
a) both networks will receive 2048 bytes as a single unit
b) message stream network will receive 1024 bytes only at one time. But byte stream network will receive 2048 bytes as a single unit.
c) message stream network receives 2048 bytes as a whole. But bytes stream 1024 bytes only at a time.
d) both will receive 1024 bytes at one time since there is a gap between writes.

53. A noiseless 3 kHz channel transmits bits with binary level signals. What is the maximum data rate ?
a) 3 kbps b) 6 kbps **c)** 12 kbps d) 24 kbps

54. A bridge has access to which address of a station on the same network ?
a) Physical b) Network c) Service access point d) All of these

55. Unmodulated signal coming from a transmitter is known as:
a) carrier signal b) baseband signal c) primary singal d) None of these

56. Bit stuffing refers to:
a) inserting a '0' in user stream to differentiate it with a tag

b) inserting a '0' in lag stream to avoid ambiguity
c) appending a nibble to the lag sequence
d) appending a nibble to the use data stream

57. What uses a physical star topology ?
a) 10 base 5 b) 10 base 2 c) 10 base T d) None of these

58. In Token Ring, when a frame reaches its destination station, then
a) message is copied b) four bits in the packet are changed
c) message is taken of the ring and replaced by the token d) both (a) and (b)

59. Which of the following is not a transceiver function?
a) Transmission and receipt of data b) Checking of line voltages
c) Addition and subtraction of headers d) Collision detection

60. Ether LAN uses:
a) polar encoding b) diferential manchester encoding
c) manchester encoding d) NRZ

61. Which of the following uses an 8B/6T encoding scheme?
a) 100 Base-TX b) 100 Base-FX c) 100 Base-T4 d) 100 Base-T1

62. The station-to-hub distance in which of the following is 2000 meters ?
a) 100 Base-TX b) 100 Base-FX c) 100 Base - T4 d) 100 Base - T1

63. In which circuit switching, delivery of data is delayed because data must be stored and retrieved from RAM :
a) space-division b) time-division c) virtual d) packet

64. Establishing a virtual connection is virtually equivalent to:
a) placing a telephone call prior to a conversion b) connecting as virtual memory
c) physically connecting a DTE and DCE d) placing a modem prior to a conversion

65. Which of the following measures the number of lost or garbled messages as a fraction of the total sent in the sampling period ?
a) Residual error rate b) Connection release failure probability
c) Transfer failure probability d) Connection establishment failure probability

Answers: 1) c. 2) c. 3) a. 4) c. 5) c. 6) c. 7) a. 8) c. 9) c. 10) c. 11) a. 12) d. 13) a. 14) d. 15) a. 16) d. 17) a. 18) b. 19) a. 20) b. 21) d. 22) c. 23) b. 24) d. 25) c. 26) c. 27) b. 28) a. 29) a. 30) c. 31) c. 32) c. 33) b. 34) b. 35) b. 36) b. 37) a. 38) c. 39) a. 40) d. 41) d. 42) c. 43) a. 44) b. 45) c. 46) c. 47) b. 48) c. 49) b. 50) d. 51) b. 52) b. 53) b. 54) a. 55) b. 56) a. 57) c. 58)d. 59) c. 60) c. 61) c. 62) b. 63) b. 64) a. 65) a.