Academy Of Technology
Question Bank
SET-I

Subject: Computer Networks **Code: PCC-CS602**

1. The data link layer provides …… delivery.

a) host-to-host b) port-to-port c) process-to-process d)**hop-to-hop**

2. For *n* devices in a network and duplex mode transmission facility, the number of cable links required for a mesh topology is –

a) n^2 b) 2nc)**n(n-1)/2** d) n(n-1)

3. The layer responsible for encryption technique in OSI model is –

a) networkb)**presentation** c) data link d) session

4. Which topology requires a multipoint connection?

a) mesh b) ring c) star d)**bus**

5. The transport layer provides …… delivery.

a) bit-to-signal transmission b) bit synchronizationc) **process-to-process** d) hop-to-hop

6. The topology with highest reliability is–

a) bus topology b) star topology c)**mesh topologyd**)ring topology

7. A network which is used for sharing data, software and hardware among small number of users owning micro computers is called

a) WAN b**) LAN** c) MAN d) VAN

8. Which topology requires a central controller or hub?

a) Mesh b) **star** c)ring d) bus

9. Flow control in OSI reference model is performed in –

a) **Data link layer** b) Network layer c) Session layer d) Application layer

10. Method of communication in which transmission takes place in both directions, But only in one direction at a time, is called –

a) Simplex b) full-duplex c) four-wire circuit d) **half-duplex**

11. Communication between a computer and a keyboard involves –

a) Simplex b) Half-duplex c) Duplex d) Automatic

12. The key elements of a protocol are –

a) syntax b) semantics c) timing d) **all of these**

13. Protection of data from a natural disaster such as a tornado belongs to which of the following network issue –

a) performance b) **reliability** c) security d) management

14. The two parameters used for measuring the performance of a network are –

a) **throughput and delay** b)power and delay

c)power andthroughput d)throughput and buffer size

15. Different computers are connected to a LAN by a cable and –
    a) Modem b) **NIC**c) special wires d) telephone lines

16. In networking terminology UTP means–

a) **Unshielded twisted pair** b) Ubiquitous Teflon port

c) Uniformly terminating port d) Unshielded T-connector port

17. A telephone network is an example of ……. network.
    a) Packet-switched b) **Circuit-switched** c) Message-switched d) None of the above

35. Trailer is added to frame in –

    a) Session layer b) Application layer c) **Data link layer** d) Network layer

18. Error detection at the data link layer is achieved by –
    a) Bit stuffing b) **CRC** c) Hamming code d) Equalization

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

20. For Stop-and-Wait ARQ, for n data packets sent ……acknowledgements are needed.
    a) **n** b) 2n c) n-1 d) n+1

21. In HDLC inserts a 0 bit after …….consecutive 1 bits in the message data.
a) 4 b)6 c) **5** d)7

22. The data link layer takes the packets from _____ and encapsulates them into frames for transmission.
    a) **network layer** b) physical layer c) transport layer d) application layer

23. Which of the following tasks is not done by data link layer?
    a) framing b) error control c) flow control d) **channel coding**

24. When 2 or more bits in a data unit has been changed during the transmission, the error is called _____
    a) random error b) **burst error** c) inverted error d) double error
25. CRC stands for _____
    a) **cyclic redundancy check** b) code repeat check
    c) code redundancy check d) cyclic repeat check

26. Which of the following is a data link protocol?
    a) Ethernet b) point to point protocol
    c) **hdlc** d) all of the mentioned

27. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called _____
    a) **piggybacking** b) cyclic redundancy check
    c) fletcher's checksum d) parity check

28. The physical layer is concerned with _____
    a**) bit-by-bit delivery** b) process to process delivery
    c) application to application delivery d) port to port delivery
29. Which transmission media provides the highest transmission speed in a network?
    a) coaxial cable b) twisted pair cable
    c) **optical fiber** d) electrical cable

30. The message 11001001 is to be transmitted using the CRC polynomial x^3 + 1 to protect it from errors. The message that should be transmitted is:
    a) 11001001000
    b) **11001001011**
    c) 11001010
    d) 110010010011
31. Which among the following represents the objectives/requirements of Data Link Layer?
    a. Frame Synchronization
    b. Error & Flow Control
    c. **Both a & b**
    d. None of the above
32. Which category of HDLC frames undergoes error and flow control mechanisms by comprising send and receive sequence numbers?
    a. U-frames
    b. I-frames
    c. **S-frames**
    d. All of the above
33. Which category of HDLC frames are used for sending information along with control information ?
    a. U-frames
    b. **I-frames**
    c. S-frames
    d. All of the above
34. Which category of HDLC frames are used for sending link management information ?
    a. **U-frames**
    b. I-frames
    c. S-frames
    d. All of the above
35. **Which among the following represents the objectives/requirements of Data Link Layer?**

    a. Frame Synchronization
    b. Error & Flow Control
    c. **Both a & b**
    d. None of the above
36. **When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?**
    a. **only when no error occurs at the transmission level**
    b. when retransmission of old packet in a novel frame is necessary
    c. only when station B receives frame with errors
    d. all of the above

37. **Which provision can resolve / overcome the shortcomings associated with duplication or failure condition of Stop and Wait Automatic Repeat Request protocol especially due to loss of data frames or non-reception of acknowledgement?**

a. Provision of sequence number in the header of message
b. Provision of checksum computation
c. Both a & b
d. None of the above

38. **Which consequences are more likely to occur during the frame transmission in Stop-and-Wait ARQ mechanism?**
a. Loss of frame or an acknowledgement
b. Delay in an acknowledgement
c. Normal operation
d. All of the above

39. **Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?**
a. Control Variables
b. **Sender Sliding Window**
c. Receiver Sliding Window
d. Resending of frames

40. **Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?**

a. Go-Back-N ARQ
b. **Selective Repeat ARQ**
c. Stop-and-Wait ARQ
d. All of the above

41. **What are the frames issued by the secondary station of HDLC, known as?**
a. Link
b. Command
c. Response
d. None of the above

42. **Which operational mode/s of HDLC support/s the balanced configuration by governing point-to-point link connectivity in addition to the primary as well as secondary functions performed by the station?**

a. NRM
b. ABM
c. Both a & b
d. None of the above

43. **Which type of S-frame in HDLC exhibit the correspondence of last three bits [N(R)] by defining the negative acknowledgement (NAK) number with the code value of '01'?**

a. Receive ready
b. Receive not ready
c. Reject
d. Selective Reject

44. ARQ stands for _____.

A. Automatic repeat quantization
B. Automatic repeat request

C. Automatic retransmission request
D. Acknowledge repeat request

45. Bit stuffing means adding an extra 0 to the data section of the frame when there is a sequence of bits with the same pattern as the _____.

A. header
B. trailer
C. flag
D. none of the above

46. Both Go-Back-N and Selective-Repeat Protocols use a _____.

A. sliding frame
B. sliding window
C. sliding packet
D. none of the above

47. Byte stuffing means adding a special byte to the data section of the frame when there is a character with the same pattern as the _____.

A. header
B. trailer
C. flag
D. none of the above

48. Data link control deals with the design and procedures for _____ communication.

A. node-to-node
B. host-to-host
C. process-to-process
D. none of the above

49. For Stop-and-Wait ARQ, for 10 data packets sent, _____ acknowledgments are needed.

A. exactly 10
B. less than 10
C. more than 10
D. none of the above

50. HDLC is an acronym for _____.

A. High-duplex line communication
B. High-level data link control
C. Half-duplex digital link combination

D. Host double-level circuit

51. High-level Data Link Control (HDLC) is a _____ protocol for communication over point-to-point and multipoint links.

A. bit-oriented
B. byte-oriented
C. character-oriented
D. none of the above

52. In _____ framing, there is no need for defining the boundaries of frames.

A. fixed-size
B. variable-size
C. standard
D. none of the above

53. In _____ framing, we need a delimiter (flag) to define the boundary of two frames.

A. fixed-size
B. variable-size
C. standard
D. none of the above

54. In _____, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.

A. ABM
B. NRM
C. ARM
D. NBM

55. In _____, the station configuration is unbalanced. We have one primary station and multiple secondary stations.

A. ABM
B. NRM
C. ARM
D. NBM

56. In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence numbers?

A. 0 to 63
B. 0 to 64
C. 1 to 63
D. 1 to 64

57. In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be _____

A. 15
B. 16
C. 31
D. 1

58. In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the send window must be _____

A. 15
B. 16
C. 31
D. 1

59. In Go-Back-N ARQ, if frames 4, 5, and 6 are received successfully, the receiver may send an ACK _____ to the sender.

A. 5
B. 6
C. 7
D. any of the above

60. In Selective Repeat ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be _____

A. 15
B. 16
C. 31
D. 1

61. In the _____ protocol we avoid unnecessary transmission by sending only frames that are corrupted.

A. Stop-and-Wait ARQ
B. Go-Back-N ARQ
C. Selective-Repeat ARQ
D. none of the above

62. In the _____ Protocol, the sender sends its frames one after another with no regard to the receiver.

A. Stop-and-Wait
B. Simplest
C. Go-Back-N ARQ
D. Selective-Repeat ARQ

63. In the _____ Protocol, the sender sends one frame, stops until it receives confirmation from the receiver, and then sends the next frame.

A. Stop-and-Wait

B. Simplest
C. Go-Back-N ARQ
D. Selective-Repeat ARQ

64. In the _____Protocol, if no acknowledgment for a frame has arrived, we resend all outstanding frames.

A. Stop-and-Wait ARQ
B. Go-Back-N ARQ
C. Selective-Repeat ARQ
D. none of the above

65. In the Go-Back-N Protocol, if the size of the sequence number field is 8, the sequence numbers are in _____ arithmetic,

A. modulo-2
B. modulo- 8
C. modulo-256
D. none of the above

66. Stop-and-Wait ARQ is a special case of Go-Back-N ARQ in which the size of the send window is 1.

A. 2
B. 1
C. 8
D. none of the above

67. In Selective Repeat ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the send window must be _____

A. 15
B. 16
C. 31
D. 1

68. The most common protocol for point-to-point access is the Point-to-Point Protocol (PPP), which is a _____protocol.

A. bit-oriented
B. byte-oriented
C. character-oriented
D. none of the above

69. multiple access protocol for channel access control
a) CSMA/CA
b) CSMA/CD
c) Both a&b
d) None of the mentioned

70. HUB is a _____ Device and Switch is a _____ Device.

a. Unicast, Multicast
b. Malticast, Unicast
c. **Broadcast, Unicast**
d. None of Above

71. What does MAC stands for?
a. Memory access control
b. **Media access control**
c. Memory access communication
d. None

72. Which error detection method uses one's complement arithmetic?
a. Simple parity check
b. Two-dimensional parity check
c. CRC
d. **Checksum**

73. Which error detection method consists of just one redundant bit per data unit?
a. **Simple parity check**
b. Two-dimensional parity check
c. CRC
d. Checksum

74. The _____ between two words is the number of differences between corresponding bits.
a. Hamming code
b. **Hamming distance**
c. Hamming rule
d. none of the above

75. To guarantee the detection of up to 5 errors in all cases, the minimum Hamming distance in a block code must be _____.
a. 5
b. **6**
c. 11
d. 12