**18CSS202J COMPUTER COMMUNICATION NETWORKS**

**UNIT IV**

**Question Bank**

**Part A**

1. Each frame in HDLC may contain up to

A. Three fields

B. Four fields

C. Five fields

D. Six fields

ANSWER: A

2. Data link layer in IEEE standard is divided into two sub-layers of

A.MAC and ACKs

B. LAN and MAC

C. LLC and NLC

D. LLC and MAC

ANSWER: D

3. Protocols in which the sender, sends one frame and waits for an ACK before proceeding is called\_\_\_

A. Sliding

B. Go back N

C. Selective repeat

D. Stop n Wait

ANSWER: D

4. Which category of HDLC frames undergoes error and flow control Mechanisms by comprising send and receive sequence numbers?

A.U-Frame

B. I-Frames

C. S-Frames

D. T-Frames

ANSWER: A

5. HDLC is a\_\_\_\_ oriented protocol

A.Bit

B.Character

C.Byte

D.Count

ANSWER: B

6. In sliding window flow control, if the window size is 63, what is the range of sequence no?

A.0-63

B. 1-63

C. 0-64

D. 1-64

ANSWER: B

7. Decryption and encryption of data is the responsibility of\_\_\_\_\_

A. Physical

B. Data Link

C. Presentation

D. Transport

ANSWER: C

8. Data link layer takes the packet it gets from the network layer and encapsulates them into\_\_\_

A. Cells

B.Frames

C.Packets

D.Trailor

ANSWER: B

9. Relation between data bits(m) and redundancy bits(r) in hamming code is\_\_\_

A. 2r > m + r + 1

B. 2r > m + r + 2

C. 2r > m - r + 2

D. 2r > m - r + 1

ANSWER: A

10. Protocols in which the sender sends multiple frames and waits for an ACK before proceeding are called\_\_\_

A.Poll

B. Go back N

C. Select

D. Stop n Wait

ANSWER: B

11. If message=10100101 ,received bit=10000111,calculate the length of burst error**?**

A.4

B.5

C.6

D.7

ANSWER: B

12. \_\_\_\_\_\_\_\_\_\_\_ is a bit-oriented protocol for communication over point-to-point and multipoint links.

A. Stop-and-Wait

B. Simple

C. Go-Back-N

D. High-level Data Link Control

ANSWER: D

13. Which protocol of the data-link layer neither uses flow nor error control?

A. Stop-and-Wait

B. Simple

C. Go-Back-N

D. Selective-Repeat

ANSWER: B

14. Which protocol checks for corrupted frames and sends an acknowledgement to the sender when it transmits messages to the receiver?

A. Simple

B. Go-Back-N

C. Selective-Repeat

D. Stop-and-Wait

ANSWER: D

15. Which layers establish, maintain, and synchronize the interaction between communicating systems?

A. Presentation

B. Session

C. Application

D. Data-Link

ANSWER: B

16. Which frame is used to send user data and control information relating to user data?

A. I-frame

B. S-frame

C. U-frame

D. Y-frame

ANSWER: A

17.  In cyclic redundancy checking, the divisor is \_\_\_\_\_\_\_ the CRC.

A)   one bit less than

B)   one bit more than

C)   The same size as

D)   None of the above

ANSWER: B

18.HDLC is a acronym for\_\_\_\_\_\_\_\_\_\_\_\_\_

A)   High Duplex Communication

B)   High-Level Data Link Control

C)   Half Duplex Digital Link Communication

D)   Host Double level Circuit

ANSWER: B

19. ARQ stands for \_\_\_\_\_\_\_.

A.Automatic repeat quantization

B.Automatic repeat request

C.Automatic retransmission request

D.Acknowledge repeat request

ANSWER: B

20.  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)   1

B)   15

C)   16

D)   31

ANSWER: D

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

A)   1 to 63

B)   1 to 64

C)   0 to 63

D)   0 to 64

ANSWER: C

22. The \_\_\_\_\_\_ Protocol has neither flow nor error control.

A)   Selective-Repeat ARQ

B)   Go-Back-N ARQ

C)   Stop-and-Wait

D)   Simplest

ANSWER: D

23. For Stop-and-Wait ARQ, if 10 data packets are sent, \_\_\_\_\_\_\_ acknowledgments are needed.

A)   less than 10

B)   more than 10

C)   exactly 10

D)   none of the above

ANSWER: C

24. 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)   trailer

B)   flag

C)   header

D)   none of the above

ANSWER: B

25. The physical layer is concerned with the movement of \_\_\_\_\_\_\_ over the physical medium.

A) dialogs

B) protocols

C) bits

D) programs

ANSWER: C

26. 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)   trailer

B)   flag

C)   header

D)   none of the above

ANSWER:B

27. The Simplest Protocol and the Stop-and-Wait Protocol are for \_\_\_\_\_\_ channels.

A)   noiseless

B)   noisy

C)   either (a) or (b)

D)   neither (a) nor (b)

ANSWER:A

28. As the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_\_\_.

A) Rearranged

B) Removed

C) Added

D) Modified

ANSWER:C

29. The signal rate is sometimes called the \_\_\_\_ rate.

A) bit

B) baud

C) signal

D) none of the above

ANSWER:B

30. In modulo-2 arithmetic, \_\_\_\_\_\_\_\_\_\_ give the same results.

A)   addition and subtraction

B)   addition and multiplication

C)   addition and division

D)   none of the above

ANSWER:A

31. PPP consists of \_\_\_\_\_\_\_\_components  
a) Three (encapsulating, the Domain Name system)  
b) Three ( encapsulating, a link control protocol, NCP )  
c) Two ( a link control protocol, Simple Network Control protocol)  
d)Two ( a link control protocol, TCP)

ANSWER:B

32. In PPP, the default maximum length of the information field is \_\_\_\_\_\_\_\_

a)1000 bytes

b)1500 bytes

c) 2000bytes

d) 2500bytes

ANSWER:B

33. Propagation delay depends on\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
a) Packet length

b) Transmission rate

c) Distance between the routers

d) Frame number

ANSWER:C

34. In Cyclic Redundancy Check, The CRC indicates\_\_\_\_\_\_\_\_\_\_\_-

a) The divisor

b) The remainder

c) The divisor

d) The quotient

ANSWER:B

35. Which protocol does the PPP protocol provide for handling the capabilities of the connection/link on the network?  
a) LCP

b) NCP

c) Both LCP and NCP

d) TCP

ANSWER:C

36. PPP provides the \_\_\_\_\_\_\_ layer in the TCP/IP suite.  
a) Link

b) Network

c) Transport

d) Application

ANSWER:A

37. In the Go-Back-N window, when the timer of the packet times out, several packets have to be resent even though some may have arrived safely. whereas in the Selective Repeat window, tries to send \_\_\_\_\_\_\_\_\_\_\_

a) Packet that have not lost

b) Packet that have lost or corrupted

c) Packet from starting

d) All the packets

ANSWER:B

38. **In Carrier Sense Multiple Access/Collision Detection (CSMA/CD), the sending station must Detect**

1. **Collision**
2. **Sense**
3. **Signal**
4. **Station**

**Answer A**

39. A Link Control Protocol (LCP) is used for  
a) Establishing, configuring and testing the data-link connection  
b) Establishing and configuring different network-layer protocols  
c) Testing the different network-layer protocols  
d) Debugging

ANSWER:A

40. For Carrier Sense Multiple Access/Collision Detection (CSMA/CD), we need a restriction on the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-

1. Frame size
2. Collision size
3. Station size
4. User size

Answer a

41\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ requires that each station listen to the medium before sending

1. CSMA
2. ALOHA
3. FDMA
4. TDMA

Answer a

42.To Avoid collisions on wireless networks,\_\_\_\_\_\_\_\_\_\_\_\_\_\_was implemented

a)CSMA/CA

b)ALOHA

c)TDMA

d)CSMA/CD

**Answer a**

43. 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

Answer b

44. Which of the following is the multiple access protocol for channel access control?  
a) CSMA/CD  
b) CSMA/CA  
c) Both CSMA/CD & CSMA/CA  
d) HDLC

Ans c

45. In \_\_\_\_\_\_, the chance of collision can be reduced if a station senses the medium before trying to use it.

1. MA
2. CSMA
3. FDMA
4. CDMA

Answer b

46.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are the two control signals used in CSMA/CA

1. RTS and CTS
2. RTA and CTA
3. DSF and SFS
4. TDD and FDD

Answer a

**Part B 10 MARK**

1. What do you mean by sliding window protocol? Distinguish between the Go-back-N protocol and selective repeat protocol.

2. Compare HDLC and PPP protocols and explain about frame format used in both protocols.

4. Describe the working principle of Carrier sense multiple access with collision Detection (CSMA/CD)

3. What do you mean by ARQ mechanism? Explain any one error control protocol used.

5. Elaborate on the cyclic redundancy check (CRC) error detection mechanism with an example.

6. Describe the High-Level Data Link Control protocol with the frame structure.

7. Describe the checksum method of error detection with an example.

8. Elaborate on the Hamming Distance method of error detection and correction with the aid of an example

9. Describe the operation of Carrier sense multiple access with collision avoidance (CSMA/CA)