

MULTIPLE CHOICE QUESTIONS IN DATA COMMUNICATIONS AND NETWORKING

A Complete Chapter Quiz

Data Link Control

Compilation of all the quizzes (MCQs) for each and every chapters in the book of Data Communications and Networking 4th Edition by Behrouz A. Forouzan.

1. 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) 1
- B) 15
- C) 16
- D) 31

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

- A) 6
- B) 7
- C) 5
- D) any of the above

3. The Stop-And-Wait ARQ, Go-Back-N ARQ, and the Selective Repeat ARQ are for _____ channels.

- A) noiseless
- B) noisy
- C) either (a) or (b)
- D) neither (a) nor (b)

4. The _____ Protocol, adds a simple error control mechanism to the _____ Protocol.

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

5. In PPP, the _____ is responsible for establishing, maintaining, configuring, and terminating links.

- A) PAP
- B) CHAP
- C) LCP
- D) NCP

6. HDLC is an acronym for _____.

- A) Half-duplex digital link combination
- B) Host double-level circuit
- C) High-duplex line communication
- D) High-level data link control

7. 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) 1
- B) 15
- C) 16
- D) 31

8. 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

9. In Stop-and-Wait ARQ, the acknowledgment number always announces in _____ arithmetic the sequence number of the next frame expected.

- A) modulo-m
- B) modulo-2
- C) modulo-4
- D) none of the above

10. 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) 1
- B) 15
- C) 16
- D) 31

11. _____ control refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.

- A) Flow
- B) Error
- C) Transmission
- D) none of the above

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

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

13. _____ control refers to methods of error detection and correction.

- A) Flow
- B) Error
- C) Transmission
- D) none of the above

14. 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

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

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

16. In _____, the configuration is balanced. The link is point-to-point, and

each station can function as a primary and a secondary.

- A) ARM
- B) ABM
- C) NBM
- D) NRM

17. 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

18. The _____ Protocol has neither flow nor error control.

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

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

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

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

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

21. _____ framing uses two categories of protocols: character-oriented and bit-oriented.

- A) Standard
 B) Fixed-size
 C) Variable-size
 D) None of the above
22. _____ control refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.
 A) Flow
 B) Error
 C) Transmission
 D) none of the above
23. In a _____ protocol, the data section of a frame is a sequence of characters.
 A) bit-oriented
 B) character-oriented
 C) either (a) or (b)
 D) none of the above
24. In _____ framing, there is no need for defining the boundaries of frames.
 A) standard
 B) fixed-size
 C) variable-size
 D) none of the above
25. The _____ Protocol has both flow control and error control.
 A) Stop-and-Wait
 B) Selective-Repeat ARQ
 C) Go-Back-N ARQ
 D) both (b) and (c)
26. In _____, the station configuration is unbalanced. We have one primary station and multiple secondary stations.
 A) ARM
 B) NBM
 C) NRM
 D) ABM
27. In a _____ protocol, the data section of a frame is a sequence of bits.
 A) bit-oriented
 B) byte-oriented
 C) either (a) or (b)
 D) none of the above
28. In _____ framing, we need a delimiter (flag) to define the boundary of two frames.
 A) standard
 B) fixed-size
 C) variable-size
 D) none of the above
29. High-level Data Link Control (HDLC) is a _____ protocol for communication over point-to-point and multipoint links.
 A) byte-oriented
 B) bit-oriented
 C) character-oriented
 D) none of the above
30. 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
31. In the _____ Protocol, if no acknowledgment for a frame has arrived, we resend all outstanding frames.
 A) Go-Back-N ARQ
 B) Selective-Repeat ARQ
 C) Stop-and-Wait ARQ
 D) none of the above

32. 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)

33. The _____ Protocol has flow control, but not error control.

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

34. In Stop-and-Wait ARQ, we use sequence numbers to number the frames. The sequence numbers are based on _____ arithmetic.

- A) modulo-m
- B) modulo-2
- C) modulo-4
- D) none of the above

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

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

36. _____ control in the data link layer is based on automatic repeat request, which is the retransmission of data.

- A) Flow
- B) Error
- C) Transmission
- D) none of the above

37. In PPP, _____ is a three-way hand-shaking authentication protocol in

which the password is kept secret; it is never sent online.

- A) PAP
- B) LCP
- C) NCP
- D) CHAP

38. In PPP, _____ is a simple authentication procedure with a two-step process:

- A) CHAP
- B) PAP
- C) LCP
- D) NCP

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

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

40. In _____ protocols, we use _____.

- A) byte-oriented; bit stuffing
- B) bit-oriented; bit stuffing
- C) character-oriented; bit stuffing
- D) none of the above

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

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

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

- A) 1

- B) 2
 - C) 8
 - D) none of the above
43. ARQ stands for _____.
- A) Acknowledge repeat request
 - B) Automatic retransmission request
 - C) Automatic repeat quantization
 - D) Automatic repeat request
44. _____ in the data link layer separates a message from one source to a destination, or from other messages going from other sources to other destinations.
- A) Controlling
 - B) Framing
 - C) Digitizing
 - D) none of the above
45. Data link control deals with the design and procedures for _____ communication.
- A) node-to-node
 - B) process-to-process
 - C) host-to-host
 - D) none of the above
46. In _____ protocols, we use _____.
- A) bit-oriented; character stuffing
 - B) character-oriented; bit stuffing
 - C) character-oriented; byte stuffing
 - D) none of the above