

UNIT-3: DATA LINK LAYER

Multiple Choice Questions

1. Which layer is responsible for framing?

- a) Physical Layer
- b) Data Link Layer
- c) Network Layer
- d) Transport Layer

Ans: b) Data Link Layer

2. The Protocol Data Unit (PDU) of the Data Link Layer is:

- a) Packet
- b) Segment
- c) Frame
- d) Bit

Ans: c) Frame

3. Which of the following is used for error detection?

- a) CRC
- b) FTP
- c) SMTP
- d) HTTP

Ans: a) CRC

4. CRC stands for:

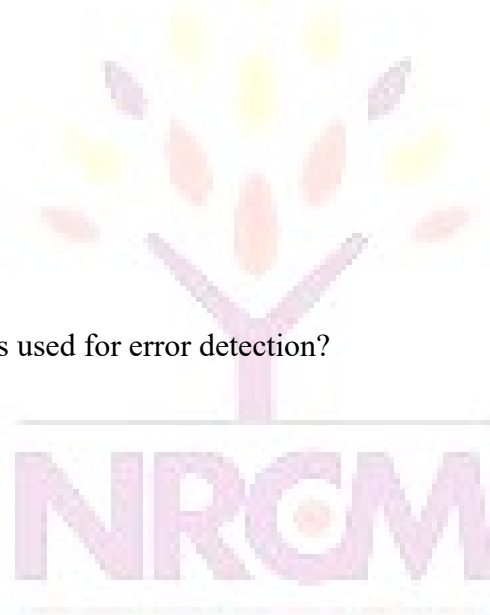
- a) Cyclic Redundancy Check
- b) Central Routing Check
- c) Cyclic Routing Control
- d) Central Redundancy Control

Ans: a) Cyclic Redundancy Check

5. Flow control is used to:

- a) Encrypt data
- b) Prevent receiver overload
- c) Compress data
- d) Route packets

Ans: b) Prevent receiver overload



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6. Which protocol sends one frame and waits for acknowledgment?

- a) Sliding Window
- b) Selective Repeat
- c) Stop-and-Wait
- d) Go-Back-N

Ans: c) Stop-and-Wait

7. ACK stands for:

- a) Access
- b) Acknowledgment
- c) Accuracy
- d) Authentication

Ans: b) Acknowledgment

8. ARQ stands for:

- a) Automatic Repeat reQuest
- b) Automatic Routing Query
- c) Address Resolution Query
- d) Access Request Queue

Ans: a) Automatic Repeat reQuest

9. Which protocol improves channel efficiency by sending multiple frames?

- a) Stop-and-Wait
- b) Sliding Window
- c) Polling
- d) Token Passing

Ans: b) Sliding Window

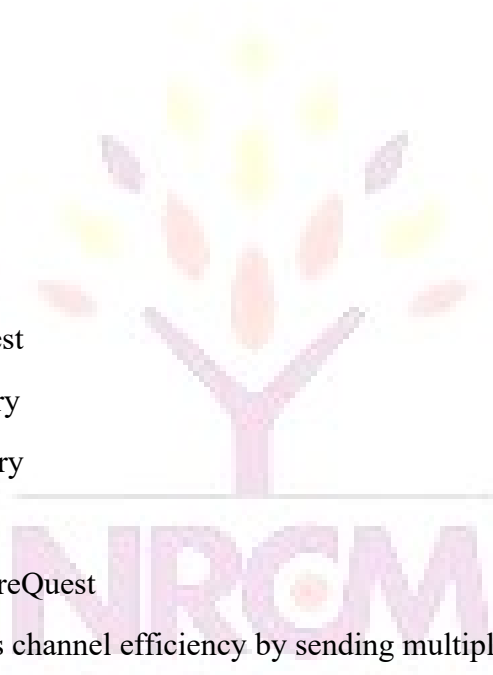
10. HDLC is a:

- a) Network Layer Protocol
- b) Data Link Layer Protocol
- c) Transport Protocol
- d) Application Protocol

Ans: b) Data Link Layer Protocol

11. Go-Back-N ARQ retransmits:

- a) Only damaged frame



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- b) All frames
- c) Damaged frame and subsequent frames
- d) No frames

Ans: c) Damaged frame and subsequent frames

12. Selective Repeat ARQ retransmits:

- a) All frames
- b) Only erroneous frame
- c) Only acknowledgment
- d) Entire message

Ans: b) Only erroneous frame

13. Which address is used in the Data Link Layer?

- a) IP Address
- b) MAC Address
- c) Port Number
- d) URL

Ans: b) MAC Address

14. Framing is necessary because:

- a) Data must be organized into manageable units
- b) Data must be encrypted
- c) Data must be compressed
- d) Data must be routed

Ans: a) Data must be organized into manageable units

15. Error control ensures:

- a) Fast transmission
- b) Secure transmission
- c) Reliable transmission
- d) Cheap transmission

Ans: c) Reliable transmission

16. Which of the following is an error detection technique?

- a) CRC
- b) Routing
- c) Multiplexing

d) Switching

Ans: a) CRC

17.The Data Link Layer lies between:

- a) Physical and Network Layers
- b) Network and Transport Layers
- c) Session and Presentation Layers
- d) Application and Session Layers

Ans: a) Physical and Network Layers

18.The sender retransmits frames when:

- a) ACK is received
- b) NAK or timeout occurs
- c) Data is compressed
- d) Routing changes

Ans: b) NAK or timeout occurs

19.NAK stands for:

- a) Negative Acknowledgment
- b) Network Access Key
- c) New Access Kernel
- d) Node Address Key

Ans: a) Negative Acknowledgment

20.The main functions of the Data Link Layer are:

- a) Routing and Congestion Control
- b) Framing, Flow Control, and Error Control
- c) Encryption and Decryption
- d) Session Management

Ans: b) Framing, Flow Control, and Error Control

Fill in the Blanks

1. The Data Link Layer is the _____ layer of the OSI model.

Ans: Second

2. The Data Link Layer converts raw bits into _____.

Ans: Frames

3. The process of dividing data into frames is called _____.
Ans: Framing
4. Error detection is one of the primary functions of the _____ Layer.
Ans: Data Link
5. CRC stands for Cyclic Redundancy _____.
Ans: Check
6. VRC stands for Vertical Redundancy _____.
Ans: Check
7. LRC stands for Longitudinal Redundancy _____.
Ans: Check
8. The sender waits for an acknowledgment in the _____ protocol.
Ans: Stop-and-Wait
9. Flow control prevents the receiver from being _____.
Ans: Overloaded
10. Error control ensures reliable _____ transmission.
Ans: Data
11. HDLC stands for High-Level Data Link _____.
Ans: Control
12. A frame received correctly is acknowledged using _____.
Ans: ACK
13. A damaged frame is retransmitted using the _____ mechanism.
Ans: ARQ
14. ARQ stands for Automatic Repeat reQuest.
Ans: Repeat
15. Sliding Window Protocol improves channel _____.
Ans: Utilization
16. Go-Back-N ARQ retransmits all frames from the _____ frame onward.
Ans: Lost
17. Selective Repeat ARQ retransmits only the _____ frame.
Ans: Erroneous
18. Data Link Layer provides _____ control and error control.
Ans: Flow
19. The address used at the Data Link Layer is the _____ address.
Ans: MAC
20. The PDU of the Data Link Layer is called a _____.
Ans: Frame