Unit-IV

1.The Transport Layer is the _____ layer in the OSI model.

A) Second
B) Third
C) Fourth
D) Fifth
Answer: C) Fourth

2. The primary responsibility of the Transport Layer is:

A) Routing
B) End-to-End Communication
C) Framing
D) Physical Transmission
Answer: B) End-to-End Communication

3. Which layer lies directly above the Network Layer?

A) Session Layer
B) Transport Layer
C) Data Link Layer
D) Application Layer
Answer: B) Transport Layer

4. Multiplexing at the Transport Layer is achieved using:

A) MAC Addresses
B) Port Numbers
C) IP Addresses
D) Frame Numbers
Answer: B) Port Numbers

5. The process of delivering data to the correct application is called:

A) Routing
B) Multiplexing
C) Demultiplexing
D) Framing
Answer: C) Demultiplexing

6. UDP stands for:

A) User Datagram Protocol
B) Universal Datagram Protocol
C) User Data Packet

D) Unified Data Protocol
Answer: A) User Datagram Protocol

7. UDP is a:

A) Connection-oriented protocol
B) Connectionless protocol
C) Reliable protocol
D) Routing protocol
Answer: B) Connectionless protocol

8. Which protocol provides faster transmission with minimal overhead?

A) TCP
B) UDP
C) ICMP
D) IP
Answer: B) UDP

9. UDP provides:

A) Flow Control
B) Congestion Control
C) Reliability
D) None of these
Answer: D) None of these

10. Which field is used to detect errors in a UDP segment?

A) Sequence Number
B) Acknowledgment Number
C) Checksum
D) Window Size
Answer: C) Checksum

11. Reliable Data Transfer ensures:

A) Correct and ordered delivery
B) Fast routing only
C) Wireless communication only
D) Address assignment
Answer: A) Correct and ordered delivery

12. Go-Back-N is a:

A) Routing Algorithm
B) Error Control Protocol
C) Addressing Method

D) Congestion Technique
Answer: B) Error Control Protocol

13. In Go-Back-N, if a packet is lost:

A) Only the lost packet is retransmitted
B) All packets from the lost packet onward are retransmitted
C) No retransmission occurs
D) Receiver retransmits packets
Answer: B) All packets from the lost packet onward are retransmitted

14. Selective Repeat retransmits:

A) All packets
B) First packet only
C) Only erroneous/lost packets
D) None
Answer: C) Only erroneous/lost packets

15. Which protocol is more efficient in handling errors?

A) Stop-and-Wait
B) Go-Back-N
C) Selective Repeat
D) ALOHA
Answer: C) Selective Repeat

16. TCP stands for:

A) Transmission Control Protocol
B) Transfer Communication Protocol
C) Transmission Connection Process
D) Transport Control Process
Answer: A) Transmission Control Protocol

17. TCP is a:

A) Connectionless protocol
B) Connection-oriented protocol
C) Routing protocol
D) Wireless protocol
Answer: B) Connection-oriented protocol

18. TCP provides:

A) Reliable Data Transfer
B) Flow Control
C) Congestion Control

D) All of the above
Answer: D) All of the above

19. TCP connection establishment uses:

A) Two-way handshake
B) Three-way handshake
C) Four-way handshake
D) One-way handshake
Answer: B) Three-way handshake

20. Which flag is used to initiate a TCP connection?

A) ACK
B) FIN
C) SYN
D) RST
Answer: C) SYN

21. Which flag is used to acknowledge received data?

A) ACK
B) SYN
C) FIN
D) PSH
Answer: A) ACK

22. Round Trip Time (RTT) is the time between:

A) Sending a packet and receiving its acknowledgment
B) Two packets
C) Two frames
D) Routing updates
Answer: A) Sending a packet and receiving its acknowledgment

23. Timeout values in TCP are based on:

A) Port Number
B) RTT Estimation
C) Frame Size
D) MAC Address
Answer: B) RTT Estimation

24. TCP Flow Control is achieved using:

A) Sliding Window
B) CRC
C) Routing Tables

D) Multiplexing
Answer: A) Sliding Window

25. Flow Control prevents:

A) Routing Loops
B) Receiver Buffer Overflow
C) Packet Fragmentation
D) Address Conflicts
Answer: B) Receiver Buffer Overflow

26. TCP connection termination typically uses:

A) 2-way handshake
B) 3-way handshake
C) 4-way handshake
D) 5-way handshake
Answer: C) 4-way handshake

27. Congestion occurs when:

A) Network resources are overloaded
B) No traffic exists
C) Frames are encrypted
D) Signals are amplified
Answer: A) Network resources are overloaded

28. Which of the following is a cost of congestion?

A) Packet Loss
B) Delay
C) Reduced Throughput
D) All of the above
Answer: D) All of the above

29. TCP congestion control mainly adjusts:

A) Frame Size
B) Congestion Window
C) MAC Address
D) Port Number
Answer: B) Congestion Window

30. Which protocol is commonly used for web browsing?

A) UDP
B) TCP
C) ICMP

D) ARP
Answer: B) TCP

Fill in the Blanks

1. The Transport Layer provides _____ communication between processes.
   Answer: End-to-End
2. The Transport Layer is the _____ layer of the OSI model.
   Answer: Fourth
3. TCP stands for Transmission Control _____.
   Answer: Protocol
4. UDP stands for User Datagram _____.
   Answer: Protocol
5. UDP is a _____-oriented protocol.
   Answer: Connectionless
6. TCP is a _____-oriented protocol.
   Answer: Connection
7. Multiplexing and demultiplexing use _____ numbers.
   Answer: Port
8. The UDP segment contains a _____ field for error detection.
   Answer: Checksum
9. TCP provides reliable _____ transfer.
   Answer: Data
10. Reliable data transfer ensures correct and _____ delivery.
    Answer: Ordered
11. Go-Back-N is a _____ ARQ protocol.
    Answer: Sliding Window
12. In Go-Back-N, all packets from the lost frame onward are _____.
    Answer: Retransmitted
13. Selective Repeat retransmits only the _____ packets.
    Answer: Lost
14. TCP establishes a connection using a _____-way handshake.
    Answer: Three
15. The SYN flag is used for connection _____.
    Answer: Establishment
16. ACK stands for _____.
    Answer: Acknowledgment
17. RTT stands for Round Trip _____.
    Answer: Time
18. TCP timeout values are based on RTT _____.
    Answer: Estimation
19. Flow control prevents receiver _____.
    Answer: Overflow

20. TCP uses a _____ window mechanism for flow control.
Answer: Sliding
21. TCP connection termination uses a _____-way handshake.
Answer: Four
22. Congestion occurs when network resources become _____.
Answer: Overloaded
23. Packet loss and delay are effects of network _____.
Answer: Congestion
24. TCP performs both flow control and congestion _____.
Answer: Control
25. The congestion window is commonly represented as _____.
Answer: CWND
26. The receiver advertises its available buffer using the _____ window.
Answer: Receive
27. Reliable transport protocols use acknowledgments and _____.
Answer: Retransmissions
28. UDP does not provide _____ control.
Answer: Flow
29. TCP segments contain source and destination _____ numbers.
Answer: Port
30. The Transport Layer lies between the Network Layer and the _____ Layer.
Answer: Application
31. TCP guarantees _____ delivery of data.
Answer: Reliable
32. UDP has lower _____ than TCP.
Answer: Overhead
33. Congestion control helps improve network _____.
Answer: Performance
34. TCP is widely used for Internet _____.
Answer: Applications
35. The main goal of the Transport Layer is reliable process-to-process _____.
Answer: Communication