

## **📖 EASY (10 Questions)**

Q1. Internet Protocol (IP) primarily operates at which OSI layer?

- A. Data Link
- B. Network
- C. Transport
- D. Application

Q2. Which IP version uses 32-bit addresses?

- A. IPv6
- B. IPv4
- C. IPX
- D. MPLS

Q3. Which protocol is responsible for reliable data delivery?

- A. IP
- B. UDP
- C. TCP
- D. ICMP

Q4. How many layers are there in the TCP/IP model?

- A. 3
- B. 4
- C. 5
- D. 7

Q5. Which TCP/IP layer corresponds to the OSI Network layer?

- A. Application
- B. Transport
- C. Internet
- D. Network Access

Q6. Which protocol maps IP addresses to MAC addresses?

- A. ICMP
- B. DNS
- C. ARP
- D. DHCP

Q7. Which protocol is used for error reporting in IP networks?

- A. TCP
- B. UDP
- C. ICMP
- D. ARP

Q8. Which IP address class provides the largest number of hosts?

- A. Class A
- B. Class B
- C. Class C
- D. Class D

Q9. Which TCP/IP layer handles end-to-end communication?

- A. Internet
- B. Network Access
- C. Transport
- D. Application

Q10. Which protocol is connectionless?

- A. TCP
- B. FTP
- C. UDP
- D. HTTP

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## ☐ MEDIUM (15 Questions)

Q11. Which field in the IPv4 header prevents packets from looping indefinitely?

- A. Protocol
- B. TTL
- C. Identification
- D. Fragment Offset

Q12. Which IP address is reserved for loopback testing?

- A. 0.0.0.0
- B. 127.0.0.1
- C. 255.255.255.255
- D. 169.254.0.1

Q13. The main function of the Internet layer in TCP/IP is:

- A. Data encryption
- B. Reliable delivery
- C. Logical addressing and routing
- D. User interface

Q14. Which protocol provides dynamic IP address assignment?

- A. ARP
- B. ICMP
- C. DHCP
- D. DNS

Q15. Which IP header field supports Quality of Service (QoS)?

- A. Total Length
- B. TTL
- C. Type of Service
- D. Header Checksum

Q16. Which protocol uses port numbers?

- A. IP
- B. ICMP
- C. TCP
- D. ARP

Q17. Fragmentation in IPv4 occurs when:

- A. Packet is encrypted
- B. MTU is exceeded
- C. Routing table is full
- D. TTL reaches zero

Q18. Which TCP/IP layer includes protocols like HTTP and FTP?

- A. Transport
- B. Application
- C. Internet
- D. Network Access

Q19. Which address is used to identify a network interface?

- A. IP address
- B. Port number
- C. MAC address
- D. Socket

Q20. Which protocol resolves domain names to IP addresses?

- A. ARP
- B. ICMP
- C. DNS
- D. DHCP

Q21. Which TCP flag is used to initiate a connection?

- A. ACK
- B. FIN
- C. SYN
- D. RST

Q22. Which type of IP address is not routable on the Internet?

- A. Public
- B. Private
- C. Global
- D. Anycast

Q23. Which protocol is best suited for real-time applications?

- A. TCP
- B. FTP
- C. UDP
- D. SMTP

Q24. Which TCP/IP layer is equivalent to OSI Physical + Data Link layers?

- A. Internet
- B. Transport
- C. Network Access
- D. Application

Q25. Which IP address represents all hosts on a network?

- A. Network address
  - B. Loopback address
  - C. Broadcast address
  - D. Multicast address
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## **HARD (15 Questions)**

Q26. Which IPv4 header field uniquely identifies fragmented packets?

- A. TTL
- B. Identification
- C. Protocol
- D. Header Length

Q27. In TCP/IP, encapsulation begins at which layer?

- A. Network Access
- B. Internet
- C. Transport
- D. Application

Q28. Which mechanism ensures ordered delivery in TCP?

- A. Window size
- B. Acknowledgments
- C. Sequence numbers
- D. Checksums

Q29. Which ICMP message indicates destination unreachable?

- A. Echo Request
- B. Echo Reply
- C. Time Exceeded
- D. Destination Unreachable

Q30. Which IP address class uses the first octet range 128–191?

- A. Class A
- B. Class B
- C. Class C
- D. Class D

Q31. Which TCP/IP protocol operates without acknowledgments?

- A. TCP
- B. UDP
- C. ICMP
- D. ARP

Q32. Which IP field supports packet reassembly?

- A. TTL
- B. Fragment Offset
- C. Protocol
- D. Version

Q33. Which TCP/IP layer is responsible for routing decisions?

- A. Application
- B. Transport
- C. Internet
- D. Network Access

Q34. Which scenario best suits UDP over TCP?

- A. File transfer
- B. Email delivery
- C. Video streaming
- D. Database replication

Q35. Which TCP mechanism prevents sender overwhelming receiver?

- A. Congestion control
- B. Flow control
- C. Error control
- D. Segmentation

Q36. Which IP address range is reserved for private Class C networks?

- A. 172.16.0.0 – 172.31.255.255
- B. 10.0.0.0 – 10.255.255.255
- C. 192.168.0.0 – 192.168.255.255
- D. 224.0.0.0 – 239.255.255.255

Q37. Which TCP flag gracefully terminates a connection?

- A. SYN
- B. ACK
- C. FIN
- D. RST

Q38. Which protocol assists IP in error diagnostics and reporting?

- A. ARP
- B. ICMP
- C. DNS
- D. DHCP

Q39. Which TCP/IP layer is closest to the hardware?

- A. Application
- B. Transport
- C. Internet
- D. Network Access

Q40. Which statement correctly differentiates TCP and UDP?

- A. TCP is faster than UDP
- B. UDP guarantees delivery
- C. TCP is connection-oriented; UDP is connectionless
- D. UDP uses acknowledgments