# Network Technologies Question Bank

1. Write any two differences between LAN and WAN.
2. What is Bandwidth and Data Rate?
3. What do you mean by Network Protocols?
4. What is Telnet?
5. Explain MIME Protocol.
6. What do you mean by Multiplexing?
7. What is the difference between Asynchronous and Synchronous Transmission?
8. What is Satellite?
9. What are the benefits of Optical Fiber Communication?
10. Briefly explain the Key Components of Data Communication.
11. Explain Router end Gateway.
12. What is the purpose of the OSI (Open Systems Interconnection) model, and how does it help in understanding network protocols and communication?
13. Describe the differences between a hub, a switch, and a router in terms of their functions and how they operate in a network.
14. Explain the concept of IP addressing and subnetting. Provide an example of how-to subnet a given IP address.
15. What is DNS (Domain Name System) and how does it work in translating domain names to IP addresses?
16. Explain the layers of TCP/IP Protocol with proper diagram.
17. What is Time Division Switching? Explain.
18. Briefly explain the multiple layers used in SONET Protocol.
19. What do you mean by Network Topologies? Explain the types of topologies used in networking with proper diagram.
20. What are the types of Transmission Media? Explain each of them with proper diagram.
21. Explain the OSI reference model in detail.
22. Define the term error detection. Explain Cyclic Redundancy Check (CRC) with example.
23. Write the differences between following:
    (a) IPV4 and IPV6 protocol.
    (b) TCP and UDP.
24. Explain the following:

a) DNS
b) SMTP
c) HTTP

25. Discuss the advantages and disadvantages of wired and wireless network technologies, and provide examples of when to use each.
26. Discuss the concept of VLANs (Virtual LANs) and how they are used to segment and manage network traffic in a large network environment.
27. Explain the differences between IPv4 and IPv6, and discuss the reasons for the transition from IPv4 to IPv6.
28. Explain the basic concept of microwave satellite transmission in networking. How does it work, and what are its primary use cases?

29. What are the advantages and disadvantages of using microwave satellite links for long-distance data transmission compared to other technologies, such as fiber optics?
30. Describe the key components of a microwave satellite link, including the transmitter, receiver, and the satellite itself. How do they work together to establish a communication link?
31. Discuss the factors that can affect the quality and reliability of microwave satellite links. How can these challenges be mitigated in practice?
32. What is line-of-sight (LOS) propagation in microwave transmission, and why is it essential for successful communication via satellite links?
33. What is Switching? Explain the different types of Switching Techniques?
34. What is Modem? Explain Modulation and Demodulation process of Modem.
35. Describe Geo-Synchronous Satellites.
36. Explain the mechanism of light propagation in optical fiber cable.
37. What are components of Network?
38. What is Transmission Mode?
39. Differences between Half-duplex and Full-duplex modes.
40. What is Bandwidth?
41. Difference between Bridge and Router.
42. Define scope of UDP protocol.
43. What is Switching Network?
44. What is Packet Switching?
45. What are types of Fiber cable losses?
46. List any five applications of Satellite Communication.
47. Explain types of Networks.
48. Explain Checksum error detection technique.
49. Differentiate between Asynchronous and Synchronous transmission.
50. Explain role and working of DNS.
51. Explain Satellite Microwave Communication briefly.
52. Discuss Network Architecture in detail.
53. What is meant by Network Topology? Explain various types of Network Topologies with merits and demerits.
54. Discuss OSI model with functions of each layer.
55. Explain Link Routing algorithm in detail.
56. Discuss TCP/IP suite with the help of layered diagram.
57. Write short note on the following protocols:
    (a) UDP
    (b) TCP
    (c) ARP
58. Explain Space Division Switching technique.
59. Discuss Packet switching transmission technique.
60. Write short note on any three of the following:
    (a) Optical Fiber Communication
    (b) Integrated Services Digital Network (ISDN)
    (c) Terrestrial Microwave Transmission
    (d) DSL: Digital Subscriber Line
    (e) Geostationary Satellites
    (f) Encoded Data Formats

61. What is a network?
62. What is Bandwidth?
63. Define DNS.
64. What is Link?
65. What is Gateway?
66. Define DHCP scope.
67. What is MAC Address?
68. What is TCP/IP?
69. What is SSL?
70. What is a Computer Network?
71. Explain types of Networks.
72. Define the types of Transmission Modes.
73. Differentiate between LAN & WAN.
74. What is Packet Switching? Explain.
75. Define Microwave Communication.
76. What are the different types of Computer Networks? Explain with suitable example.
77. Explain Network Topology with example.
78. What is Error Detection & Correction? Explain with an example.
79. What is Open System Interconnection? Explain with an example.
    Q88. Write short notes on any four:
    (a) MAC Address
    (b) DNS
    (c) TCP/IP
    (d) IPv4 and 1Pv6
    (e) SMTP
    (f) ISDN
80. What is Data Encoding? Explain with an example.
81. Define TDM with example.
82. Write short notes on any three:
    (a) Satellite Communication
    (b) SONET
    (c) Fiber Cable
    (d) Light sources
    (e) Microwave
83. What are the advantages of using a network?
84. What is Network Topology?
85. What are the different types of networks?
86. What are the different data transmission modes?
87. What is Bandwidth?
88. What is the difference between Asynchronous and Synchronous transmission?
89. What is TCP/IP?
90. What is DHCP?
91. What is DNS?
92. What is Multiplexing?
93. What is the difference between Analog Signal and Digital Signal? Also discuss their characteristics.
94. What are the types of transmission media?

95. What is the difference between Unicast, Broadcast, Multicast and Anycast?
96. What is the difference between Peer-to-Peer Networks and Server-based Networks?
97. Explain the advantages and disadvantages of Microwave Communication.
98. Discuss different Network Topologies with their advantages and disadvantages.
99. Discuss different components of data communication network. Also discuss different types of network architecture.
100. Explain the OSI Reference model in detail.
101. What is Congestion? Discuss Leaky Bucket Algorithm and Token Bucket Algorithm for congestion control.
102. Differentiate between the following:
    (i) Static and Dynamic Routing
    (ii) IPv4 and IPv6
103. Write short notes on the following:
    (i)Telnet
    (ii) SMTP
    (iii) FTP

104. Describe in detail the circuit switching network and its merits and demerits.
105. Explain in detail Time Division Multiplexing (TDM) with their advantages and disadvantages.
106. What is the need for Satellite Communication? How a Satellite works? Also discuss applications of satellite communication.
107. Write short notes on the following:
    (i) Light propagation in optical fiber
    (ii) SONET
108. Define a network.
109. What is IP address?
110. What are the various types of networks?
111. What is the role of a switch in a network?
112. What is the importance of the OSI Physical Layer?
113. What are MAC addresses?
114. What advantages does fiber optics have over other media?
115. What is SMTP?
116. What is IPv6?
117. What are some drawbacks of implementing a ring topology?
118. Explain the relationship between Bandwidth and Data Rate.
119. Explain different modes of communication.
120. Differentiate between Multicast and Broadcast.
121. What is the difference between Asynchronous and Synchronous transmission.
122. What basic function does a communication satellite perform? Give a good reason why up-link and down-link frequencies are not the same.
123. Explain different types of network topologies with their advantages and disadvantages.
124. Explain different components of the data communication network. What is the need for a data communication network?
125. How does the transport layer ensure that the complete message arrives at the destination and in the proper order?

126. Define the term Error detection. Explain Cyclic Redundancy Check (CRC) with an example.
127. Describe the various layers of TCP/IP.
128. Write short notes on the following:
    (i) SMTP
    (ii) FTP
    (iii) Telnet
    (iv) IPv6
129. Compare between circuit switching and packet switching w.r.t.
    (i) Transmission Delay
    (ii) Path
    (iii) Bandwidth
    (iv) Intermediate Storage
130. What is multiplexing? Explain Time division multiplexing with a suitable diagram. What are the advantages of TDM?
131. Explain the characteristics of microwaves and their applications in detail.
132. Describe the structure of an optical fiber and explain the mechanism of light propagation along the fiber.