Short Questions

1. What are the advantages of hierarchical addressing in internetworking?
2. How does the Network Layer handle packet delivery in the internet?
3. What are some limitations of distance vector routing algorithms?
4. How do routers make forwarding decisions in hierarchical routing?
5. Describe the process of route discovery in flooding algorithms.
6. What mechanisms are used to prioritize traffic in QoS?
7. Discuss the challenges of achieving interoperability in internetworking.
8. How does the Network Layer handle fragmentation and reassembly of packets?
9. What role do routing protocols play in maintaining network stability?
10. Compare centralized and distributed approaches to congestion control.
11. How does the Network Layer ensure reliability in packet delivery?
12. What are some common metrics used in routing algorithms?
13. Explain the concept of virtual circuits in Quality of Service.
14. How does the Network Layer support heterogeneous networks?
15. What are some security considerations at the Network Layer?
16. How does routing information propagate in distance vector algorithms?
17. Discuss the impact of network topology on routing decisions.
18. What strategies can be employed to prevent network congestion?
19. How do routing algorithms handle loop prevention?
20. What factors influence the choice between unicast and multicast communication?
21. Explain the role of routing protocols in load balancing.
22. How does the Network Layer facilitate error detection and correction?
23. What mechanisms are used for flow control in congestion control algorithms?
24. Describe the process of address resolution in internetworking.
25. How do network layer protocols interact with higher-layer protocols in the internet stack?
26. What are the primary functions of the Transport Layer?
27. Define Transport Services in networking.
28. What are the essential elements of Transport protocols?
29. Explain the concept of Connection management in networking.
30. Differentiate between TCP and UDP protocols.
31. What does TCP stand for?
32. Describe the reliability aspect of TCP.
33. Name one application where TCP is commonly used.

34. What is UDP used for in networking?
35. How does UDP handle data transmission differently from TCP?
36. Mention one advantage of UDP over TCP.
37. What is a socket in networking?
38. Explain the three-way handshake in TCP connection establishment.
39. What is flow control in TCP?
40. Define congestion control in TCP.
41. How does TCP ensure ordered delivery of data packets?
42. Describe the header structure of a TCP segment.
43. What is a SYN flood attack, and how does it affect TCP?
44. How does TCP handle packet loss and retransmission?
45. What is the purpose of sequence numbers in TCP?
46. Explain the concept of a UDP datagram.
47. What is the maximum length of a UDP datagram?
48. Describe the header structure of a UDP packet.
49. How does UDP handle congestion control?
50. Mention one example of an application that typically uses UDP.
51. What is the difference between a connection-oriented and connectionless protocol?
52. What is the role of port numbers in TCP and UDP?
53. How does TCP ensure reliable data delivery?
54. What is the purpose of the acknowledgment mechanism in TCP?
55. Explain the concept of sliding window protocol in TCP.
56. What is the significance of the SYN and ACK flags in TCP header?
57. Describe the role of checksum in TCP and UDP.
58. How does TCP handle out-of-order packets?
59. What is the role of a sequence number in TCP?
60. Explain the concept of a TCP session.
61. How does TCP handle data flow control?
62. What is the purpose of the urgent pointer field in TCP header?
63. Differentiate between TCP and UDP in terms of reliability.
64. What are the common characteristics of TCP and UDP?
65. How does TCP handle congestion avoidance?
66. What is the difference between congestion control and flow control in TCP?
67. Explain the concept of selective acknowledgment in TCP.
68. What are the benefits of using TCP over UDP?
69. Describe the TCP connection termination process.
70. What are the advantages of using UDP over TCP?
71. How does TCP handle packet reordering?

72. What is the significance of the window size in TCP?
73. Explain the concept of a half-open connection in TCP.
74. How does UDP ensure minimal delay in data transmission?
75. What role does the checksum play in error detection for UDP packets?
76. What is the Domain Name System (DNS), and how does it work?
77. Explain the role of DNS servers in the internet architecture.
78. What is SNMP (Simple Network Management Protocol), and what is its primary function?
79. How does SNMP facilitate network management and monitoring?
80. Describe the components of an SNMP-managed network.
81. What are the key features of electronic mail (email) protocols?
82. Explain the process of sending an email from one user to another.
83. What are the different email protocols used for sending and receiving emails?
84. How does the World Wide Web (WWW) function?
85. Describe the basic structure of a URL (Uniform Resource Locator).
86. What is HTTP (Hypertext Transfer Protocol), and what role does it play in web communication?
87. Differentiate between HTTP and HTTPS.
88. How does streaming audio work over the internet?
89. What technologies are commonly used for streaming audio?
90. Explain the concept of buffering in streaming audio.
91. How is streaming video delivered over the internet?
92. Discuss the challenges associated with streaming video.
93. What are some popular streaming video services?
94. How does content delivery network (CDN) improve streaming performance?
95. Describe the role of codecs in streaming media.
96. What is DNS caching, and why is it important?
97. How does DNS resolve domain names into IP addresses?
98. What is the significance of DNSSEC (DNS Security Extensions)?
99. Explain the concept of DNS spoofing.
100. How does Dynamic DNS (DDNS) work?
101. What are the advantages of using SNMP for network management?
102. Discuss the different versions of SNMP and their features.
103. What are MIBs (Management Information Bases) in SNMP?
104. How does SNMP handle network device monitoring and control?
105. What is the purpose of SNMP traps?
106. Describe the structure of an email message header.
107. What are the common email attachment formats?

108. Explain the process of email routing.
109. What is MIME (Multipurpose Internet Mail Extensions)?
110. How does MIME handle non-textual data in emails?
111. What is SMTP (Simple Mail Transfer Protocol), and how does it work?
112. Discuss the differences between SMTP and POP3.
113. What is IMAP (Internet Message Access Protocol), and how does it differ from POP3?
114. How does the web browser interact with web servers using HTTP?
115. What are HTTP methods, and what are their purposes?
116. What is the significance of HTTP headers in web communication?
117. Explain the concept of HTTP cookies.
118. How does HTML (Hypertext Markup Language) contribute to web content?
119. What are web standards, and why are they important?
120. Describe the role of CSS (Cascading Style Sheets) in web design.
121. What is the difference between live streaming and video-on-demand (VOD)?
122. Discuss the impact of bandwidth on streaming media quality.
123. How does adaptive streaming optimize viewing experience?
124. What are the legal considerations for streaming copyrighted content?
125. Describe the architecture of a typical streaming media service.