Short Questions

1. What are the key components of network hardware?
2. Define network software and provide examples.
3. Explain the OSI reference model and its layers.
4. What are the layers of the TCP/IP reference model?
5. Describe the ARPANET network and its significance.
6. What transmission media are commonly used in guided transmission?
7. Name three types of guided transmission media.
8. What are the advantages of using fiber optics for transmission?
9. Define wireless transmission and give examples.
10. What are the main design issues in the data link layer?
11. Explain the concept of framing in the data link layer.
12. How is error detection performed in the data link layer?
13. What methods are used for error correction in the data link layer?
14. Compare twisted pairs and coaxial cables in terms of their characteristics.
15. What are the key differences between the OSI and TCP/IP reference models?
16. How does the OSI model facilitate interoperability between different network technologies?
17. What role does the TCP/IP model play in modern networking?
18. Describe the evolution of ARPANET into the modern internet.
19. What advantages do fiber optics offer over traditional copper cables?
20. Discuss the challenges associated with wireless transmission.
21. How does the data link layer ensure reliable communication between nodes?
22. What is the purpose of MAC addresses in the data link layer?
23. Explain the concept of a network frame.
24. How are errors detected in a network frame?
25. What techniques are used for error correction at the data link layer?
26. Compare and contrast guided and unguided transmission media.
27. What are the characteristics of coaxial cables?
28. Describe the process of data transmission through twisted pairs.
29. What factors influence the choice between different transmission media?
30. How does the OSI model aid in troubleshooting network issues?
31. Discuss the importance of protocol standards in network communication.
32. What are the primary functions of the OSI physical layer?
33. How do repeaters enhance signal transmission in a network?

34. Define modulation and its role in wireless transmission.
35. Explain the concept of multiplexing in data transmission.
36. What are the advantages of using error-detecting codes in data transmission?
37. Describe the function of the CRC (Cyclic Redundancy Check) in error detection.
38. How does error correction differ from error detection in data communication?
39. Discuss the impact of network latency on data transmission.
40. What factors affect the bandwidth of a communication channel?
41. Explain how noise affects signal transmission in a network.
42. What techniques are used to mitigate the effects of noise in data communication?
43. Describe the process of data encapsulation in the OSI model.
44. How do switches operate at the data link layer?
45. What role do routers play in network communication?
46. Explain the concept of a MAC address and its significance.
47. What is the purpose of the Ethernet protocol in the data link layer?
48. How does the data link layer handle collisions in a network?
49. Discuss the advantages and disadvantages of wireless LANs.
50. What security measures are commonly employed in wireless networks?
51. What is a simplex protocol, and how does it differ from full-duplex?
52. Explain the concept of a stop-and-wait protocol.
53. How does a simplex stop-and-wait protocol function on an error-free channel?
54. What adaptations are needed for a simplex stop-and-wait protocol to operate on a noisy channel?
55. Describe the basic operation of a one-bit sliding window protocol.
56. What are the advantages of using Go-Back-N protocol over stop-and-wait?
57. Explain how Selective Repeat protocol handles lost or corrupted packets.
58. Can you provide examples of real-world data link protocols?
59. What is the channel allocation problem in the medium access sublayer?
60. Compare the ALOHA protocol with carrier sense multiple access protocols.
61. How do collision-free protocols ensure efficient data transmission?
62. What are some challenges specific to wireless LANs in the data link layer?

63. Define data link layer switching and its purpose.
64. What distinguishes Android OS from other operating systems?
65. Explain the significance of Android's open-source nature.
66. How does Android utilize a Linux kernel?
67. What are the key components of Android's application framework?
68. Describe Android's security model.
69. How does Android handle multitasking?
70. What is the role of the Android Runtime (ART)?
71. Explain the function of Android's Dalvik Virtual Machine (DVM).
72. What is an Intent in Android, and how is it used?
73. Discuss Android's support for various sensors.
74. How does Android facilitate inter-process communication (IPC)?
75. What are Android Activities, and how do they relate to the user interface?
76. Describe the structure of an Android application package (APK).
77. How does Android handle memory management?
78. What is the purpose of Android's manifest file?
79. Explain the role of content providers in Android.
80. How does Android support different screen sizes and densities?
81. What is the role of the Android Asset Packaging Tool (AAPT)?
82. Discuss Android's support for localization and internationalization.
83. How does Android handle background services?
84. What is the significance of Android's notification system?
85. How does Android manage power consumption?
86. Explain Android's approach to handling permissions.
87. What is Android's Native Development Kit (NDK), and when is it used?
88. Describe Android's support for connectivity options like Wi-Fi, Bluetooth, and NFC.
89. How does Android handle data storage, both locally and in the cloud?
90. Discuss Android's support for multimedia capabilities.
91. What are Android Fragments, and how do they enhance user interface design?
92. Explain Android's approach to handling touch events.
93. How does Android support background processing tasks?
94. What is Android's approach to handling app compatibility across different versions?
95. Discuss Android's support for accessibility features.
96. How does Android handle updates and versioning?
97. What is the significance of Google Play Services in the Android

ecosystem?

98. Describe Android's approach to handling security vulnerabilities and updates.
99. How does Android support development for multiple device form factors?
100. Discuss the role of Android's development tools in the app development process.
101. What are the main design issues in the Network Layer?
102. Explain the concept of shortest path routing.
103. How does flooding work in routing algorithms?
104. What is hierarchical routing and how does it differ from other routing approaches?
105. Define broadcast and multicast in the context of network communication.
106. Explain the distance vector routing algorithm.
107. What are congestion control algorithms and why are they important?
108. Discuss the concept of Quality of Service (QoS) in networking.
109. What is internetworking and why is it necessary?
110. Describe the role of the Network Layer in the internet.
111. What are some common challenges in designing the Network Layer?
112. How does shortest path routing determine the optimal route in a network?
113. What are the advantages and disadvantages of flooding in routing?
114. How does hierarchical routing improve network efficiency?
115. Compare and contrast unicast, broadcast, and multicast communication.
116. Explain how distance vector routing differs from link state routing.
117. What are some examples of congestion control algorithms?
118. How does QoS impact network performance?
119. What are the key components of internetworking protocols?
120. How does the Network Layer facilitate end-to-end communication in the internet?
121. What considerations are important when designing a network protocol?
122. Discuss the role of routing tables in network communication.
123. How do routing protocols adapt to changes in network topology?
124. What are some methods for reducing congestion in a network?
125. Explain the concept of traffic shaping in Quality of Service.