

Final questions on Telecommunication network management

1. Explain the structure of CORBA architecture, provide examples of CORBA usage, and discuss the advantages and disadvantages of using CORBA in distributed systems.
2. Provide detailed information about the advantages and disadvantages of CORBA, including its scalability, compatibility, performance, and any potential limitations.
3. Provide comprehensive information about the NGOSS (New Generation Operations Systems and Software) concept, including its objectives, key components, and how it integrates with modern telecommunications systems.
4. Explain the main functions of NGOSS, highlighting its role in network and service management, its impact on operational efficiency, and its integration with other management frameworks.
5. Provide in-depth information about OSI management services, detailing their roles in network management, the layers they operate within, and their significance in maintaining network performance and reliability.
6. Explain the functions and architecture of OSS (Operations Support Systems) and BSS (Business Support Systems) class management systems, and discuss their importance in telecom network operations and business processes.
7. Provide detailed information about the components of a Service Level Agreement (SLA), including the metrics used for performance measurement, the roles of stakeholders, and examples of how SLAs are used in various industries.
8. Explain the architecture of eTOM in telecommunication network and service management, providing examples of how it is implemented and the benefits it offers.
9. Explain the benefits of using eTOM in managing telecommunication networks and services, including improvements in efficiency, scalability, and customer satisfaction.
10. Provide comprehensive information on the eTOM principle in the management of telecommunications networks and services, highlighting its key components and how it can be effectively implemented.
11. Explain the principles of TINA (Telecommunications Information Networking Architecture), including its objectives, components, and how it supports the development of telecommunication services.
12. Explain the purpose and objectives of TINA architecture, detailing its role in network management and the benefits it provides to telecommunications operators.
13. Describe the structure and operational principles of IP/MPLS-based virtual networks, including their benefits, use cases, and potential challenges.
14. Discuss the QoS (Quality of Service) standards for IP networks, including the mechanisms used to ensure service quality and examples of their application in real-world scenarios.
15. Explain the protocols and principles of IP telephony, including the technologies used, their advantages, and potential limitations.
16. Discuss the impact of voice codecs on the network characteristics of an IP telephony network, including how different codecs affect bandwidth, latency, and voice quality.
17. Describe the general operating principle of IP telephony, including how voice data is transmitted over IP networks and the key technologies involved.
18. Provide information on useful IPTV functions, including features that enhance user experience, content delivery mechanisms, and examples of popular IPTV services.
19. Explain IPv4 addressing classes, providing examples of how they are used in network design and their significance in IP addressing schemes.
20. List the differences between IPv4 and IPv6 protocols, including their addressing structures, features, and advantages of IPv6 over IPv4.
21. Explain IPv6 addressing classes, detailing their structure, significance, and examples of their use in modern network implementations.

22. Discuss the advantages of IPv6 protocol, including its larger address space, improved security features, and enhanced support for mobile devices.
23. Provide detailed information on data transfer protocols such as Frame Relay and ATM, including their operational principles, use cases, and advantages.
24. Explain the difference between a switch and a hub, including their functions, operating principles, and examples of their use in network infrastructure.
25. Discuss at which OSI layer a switch is used, including its role within that layer and its impact on network performance and efficiency.
26. Describe the types of switching devices, their design, requirements, and how they contribute to efficient network operations.
27. Explain the operating principle of a switch, including its internal mechanisms, how it forwards data, and its role in network communication.
28. Discuss the function of a switch, including its role in managing network traffic, ensuring efficient data delivery, and enhancing network performance.
29. Explain the switching methods and types of networks in computer networks, including examples of how each method is used and their respective advantages.
30. Discuss the criteria by which data transmission networks are classified, including examples of different types of networks and their characteristics.
31. Explain the switching methods and operating principles used in data transmission networks, providing examples of their applications and benefits.
32. Discuss the requirements for data transmission networks, including factors such as bandwidth, latency, reliability, and security.
33. Provide comprehensive information on data networks, including their structure, types, and examples of their use in various applications.
34. Discuss the criteria by which data transmission networks are classified, including examples of different network types and their characteristics.
35. Explain the structural diagram of data transmission networks, including key components, their functions, and how they interact.
36. Describe what a router is and its capabilities, including its role in network communication, data routing, and network segmentation.
37. Explain what a router is, including its functions, importance in network infrastructure, and examples of its use in different network setups.
38. Discuss the types of routers, their structure, requirements, and how they contribute to efficient network operations.
39. Provide information on the interfaces that routers have, including examples of common interface types and their significance in network connectivity.
40. Explain the functions of routing algorithms, including their role in determining optimal paths for data transmission and examples of commonly used algorithms.
41. Discuss the requirements for routing algorithms, including factors that influence their performance and examples of how they are implemented in network devices.
42. Provide information on the classification of routing algorithms, including different types of algorithms, their characteristics, and use cases.
43. Explain the principle of operation of the routing table, including how it stores routing information, updates paths, and contributes to efficient data transmission.
44. Discuss how the routing process is carried out, including the steps involved in routing data packets and examples of different routing protocols.
45. Provide detailed information on the IGRP (Interior Gateway Routing Protocol) routing protocol, including its features, use cases, and advantages.
46. Explain the OSPF (Open Shortest Path First) routing protocol, including its operational principles, advantages, and examples of its use in large networks.
47. Discuss the metrics used in routing algorithms, including examples of commonly used metrics, their significance, and how they influence routing decisions.

48. Explain the main objectives of the open systems benchmarking model, including its purpose, key components, and examples of its application in performance evaluation.
49. Provide information on the function of the OSPF protocol, including how it determines optimal paths, updates routing information, and its benefits in large networks.
50. Discuss the general format of packets, including their structure, key fields, and how they are used in data transmission.
51. Explain the packet routing methods, including different techniques used to route packets, their advantages, and examples of their application in various network scenarios.
52. Discuss the general format of packets, including their structure, key fields, and how they are used in data transmission.
53. What is the datagram mode and operation order when using packet switching, including its benefits, challenges, and examples of its use in network communication.
54. Provide information on the advantages and disadvantages of packet switching, including its impact on network performance, efficiency, and scalability.
55. Explain the POP (Post Office Protocol), including its role in email communication, operational principles, and examples of its use in email systems.
56. Discuss the methods of providing QoS (Quality of Service), including techniques used to ensure service quality, their benefits, and examples of their application in network management.
57. Provide detailed information on the Distance Vector Protocol RIP (Routing Information Protocol), including its operational principles, use cases, and advantages.
58. Explain the function of the RIP/RIPng protocol, including how it updates routing information, determines optimal paths, and its benefits in network communication.
59. Discuss how RSVP (Resource Reservation Protocol) works, including its role in ensuring QoS, operational principles, and examples of its application in network management.
60. Provide information on the SNMP (Simple Network Management Protocol) protocol in network management, including its functions, importance, and examples of its use in network monitoring.
61. Discuss the type and classification of network hierarchy segments, including their structure, significance, and examples of their use in network design.
62. Provide information on the general characteristics and transmission speed of network switches, including their impact on network performance and examples of commonly used switch types.
63. Explain the network switching methods and types of networks, including examples of their application, benefits, and challenges.
64. Discuss the organization of network monitoring, including techniques used for monitoring network performance, tools available, and examples of best practices.
65. Provide detailed information on network layer protocols and their functions, including examples of commonly used protocols and their significance in network communication.
66. Explain the operation of devices operating at the network level, including their functions, importance in network infrastructure, and examples of commonly used devices.
67. Discuss the function of the network layer, including its role in data transmission, key protocols used, and examples of its application in network communication.
68. Describe the devices used in the network, including their functions, types, and examples of how they contribute to efficient network operations.
69. Explain the network management system, including its components, functions, and examples of how it helps in maintaining network performance and reliability.
70. Discuss the various topologies used when building a network, including their advantages, disadvantages, and examples of their application in different network scenarios.
71. Explain the TCP/IP protocol suite, including its layers, functions, and importance in modern networking.
72. Provide information on telecommunications standards organizations, including their roles, significance, and examples of key standards they have developed.

73. Discuss the characteristics of telecommunication networks, including their structure, types, and examples of their use in different applications.
74. Explain the structure of a telecommunication network, including key components, their functions, and how they interact to provide communication services.
75. Describe the methods of information switching in telecommunication networks, including their principles, advantages, and examples of their application.
76. Discuss the main threats to telecommunication networks, including potential risks, their impact, and examples of best practices to mitigate these threats.
77. Provide detailed information on the requirements for telecommunication networks, including factors such as bandwidth, latency, reliability, and security.
78. Explain the functional areas of telecommunications network management, including key tasks, tools used, and examples of best practices.
79. Discuss the main purpose and tasks of routing in telecommunication networks, including its importance, challenges, and examples of routing protocols used.
80. Provide information on activities subject to licensing in the field of communications, including the regulatory framework, requirements, and examples of licensed activities.
81. Explain the architecture of TMN (Telecommunications Management Network), including its components, functions, and examples of its application in network management.
82. Discuss transport network protocols and their functions, including examples of commonly used protocols and their importance in data transmission.
83. Explain how VLAN (Virtual Local Area Network) works, including its structure, benefits, and examples of its use in network segmentation and management.
84. Give a general idea about VLAN networks, including their purpose, advantages, and examples of their application in modern networking.
85. Provide detailed information on VoIP (Voice over Internet Protocol), including its principles, benefits, and examples of its use in communication services.
86. Discuss the advantages and disadvantages of message switching, including its impact on network performance, efficiency, and scalability.
87. Explain the concept of message segmentation into packets, including its benefits, challenges, and examples of its use in data transmission.
88. Provide information on secure network protocols, including examples of commonly used protocols, their functions, and importance in ensuring network security.
89. Discuss the main disadvantages and problems of TMN and SNMP in the management of communication networks, including potential challenges and examples of solutions.
90. Explain the purpose, tasks, and functions of communication network management, including key activities, tools used, and examples of best practices.
91. Provide information on application layer protocols, including the Telnet protocol, its functions, and examples of its use in network communication.
92. Discuss the functional areas of practical problems in network management, including examples of common issues, their impact, and solutions to address them.
93. Explain the fundamentals of ATM (Asynchronous Transfer Mode) technology, including its principles, benefits, and examples of its use in voice, video, and data transmission over the network.
94. Discuss key indicators of the quality of the information transmission system, including metrics used for performance measurement, their significance, and examples of how they are applied.
95. Explain the DHCP (Dynamic Host Configuration Protocol), including its operational principles, benefits, and examples of its use in network management.
96. Provide information on the structure of Frame Relay, including its components, operational principles, and examples of its use in data transmission networks.
97. Discuss the components of HUAWEI routers, including their functions, importance, and examples of commonly used models.

98. Explain the ICMP (Internet Control Message Protocol) Control Message Protocol, including its functions, importance in network troubleshooting, and examples of its use.
99. Provide information on the conceptual model of an infocommunication network, including its structure, components, and examples of its application in modern communication systems.
100. Discuss why IP addressing is needed, including its role in network communication, examples of addressing schemes, and its significance in ensuring efficient data transmission.