Multiple Choice Questions in Data Communications and Networking

A Complete Chapter Quiz

Network Models

Compilation of all the quizzes (MCQs) for each and every chapters in the book of Data Communications and Networking 4th Edition by Behrouz A. Forouzan.

1. The _____ layer adds a header to the packet coming from the upper layer that includes the logical addresses of the sender and receiver.
A) data link
B) network
C) physical
D) none of the above
2. Which of the following is an application layer service?
A) File transfer and access
B) Mail service
C) Remote log-in
D) All the above
3. When data are transmitted from device A to device B, the header from A's layer 4 is read by B's _____ layer.
A) Transport
B) Application
C) Physical
D) None of the above
4. _____ provides full transport layer services to applications.
A) UDP
B) TCP
C) ARP
D) none of the above
5. The process-to-process delivery of the entire message is the responsibility of the _____ layer.
A) Transport
B) Application
C) Physical
D) Network
6. The _____ layer is responsible for moving frames from one hop (node) to the next.
A) transport
B) data link
C) physical
D) none of the above
7. The _____ layer is responsible for delivering data units from one station to the next without errors.
A) physical
B) data link
C) transport
D) network
8. The session, presentation, and application layers are the ____ support layers.
A) user
B) network
C) both (a) and (b)
D) neither (a) nor (b)
9. The physical, data link, and network layers are the _____ support layers.
A) network
B) user
C) both (a) and (b)
D) neither (a) nor (b)
10. The _____ layer is responsible for the process-to-process delivery of the entire message.
A) transport
B) physical
C) network
D) data link
11. The _____ layer lies between the network layer and the application layer.
A) Data link
B) Transport
C) Physical
D) None of the above
12. The Internetworking Protocol (IP) is a _____ protocol.

A) connection-oriented
B) reliable
C) both a and b
D) none of the above

13. The _____ layer links the network support layers and the user support layers.
A) session
B) transport
C) data link
D) network

14. ICMPv6 includes _____.
A) IGMP
B) ARP
C) RARP
D) a and b

15. The ____ address uniquely defines a host on the Internet.
A) IP
B) port
C) specific
D) physical

16. The _____ layer coordinates the functions required to transmit a bit stream over a physical medium.
A) data link
B) transport
C) network
D) physical

17. The _____ layer is responsible for the source-to-destination delivery of a packet across multiple network links.
A) network
B) physical
C) data link
D) transport

18. Mail services are available to network users through the _____ layer.
A) Transport
B) Physical
C) Data link
D) Application

19. The ____ created a model called the Open Systems Interconnection, which allows diverse systems to communicate.
A) IEEE
B) ISO
C) OSI
D) none of the above

20. The _____ layer changes bits into electromagnetic signals.
A) Physical
B) Transport
C) Data link
D) None of the above

21. IPv6 has _____ -bit addresses.
A) 128
B) 32
C) 64
D) variable

22. The_____ address identifies a process on a host.
A) specific
B) port
C) IP
D) physical

23. The_____ layer is responsible for the delivery of a message from one process to another.
A) transport
B) network
C) physical
D) none of the above

24. The _____ layer enables the users to access the network.
A) application

B) physical
C) data link
D) transport

25. The TCP/IP _____ layer is equivalent to the combined session, presentation, and application layers of the OSI model.
A) data link
B) network
C) physical
D) application

26. When a host on network A sends a message to a host on network B, which address does the router look at?
A) logical
B) physical
C) port
D) none of the above

27. As the data packet moves from the upper to the lower layers, headers are _____.
A) Rearranged
B) Removed
C) Added
D) Modified

28. The physical layer is concerned with the movement of _____ over the physical medium.
A) dialogs
B) protocols
C) bits
D) programs

29. To deliver a message to the correct application program running on a host, the _____ address must be consulted.
A) physical
B) port
C) IP
D) none of the above

30. Ethernet uses a _____ physical address that is imprinted on the network interface card (NIC).
A) 32-bit
B) 6-byte
C) 64-bit
D) none of the above

31. The _____ layer is the layer closest to the transmission medium.
A) Network
B) Transport
C) Physical
D) Data link

32. The OSI model consists of _____ layers.
A) eight
B) seven
C) five
D) three

33. The _____ address, also known as the link address, is the address of a node as defined by its LAN or WAN.
A) IP
B) port
C) specific
D) physical

34. Layer 2 lies between the physical layer and the _____ layer.
A) Data link
B) Transport
C) Network
D) None of the above

35. Why was the OSI model developed?
A) The rate of data transfer was increasing exponentially
B) Standards were needed to allow any two systems to communicate

C) Manufacturers disliked the TCP/IP protocol suite.
D) None of the above
36. In the OSI model, as a data packet moves from the lower to the upper layers, headers are _____.
A) removed
B) added
C) rearranged
D) modified
37. In the OSI model, when data is transmitted from device A to device B, the header from A's layer 5 is read by B's _____ layer.
A) session
B) physical
C) transport
D) presentation
38. The seven-layer _____ model provides guidelines for the development of universally compatible networking protocols.
A) ISO
B) OSI
C) IEEE
D) none of the above
39. The Internet model consists of _____ layers.
A) Eight
B) Seven
C) Five
D) Three
40. In the OSI model, what is the main function of the transport layer?
A) process-to-process message delivery
B) node-to-node delivery
C) synchronization
D) updating and maintenance of routing tables
41. _____ is a process-to-process protocol that adds only port addresses, checksum error control, and length information to the data from the upper layer.
A) IP
B) TCP
C) UDP
D) none of the above
42. The _____ layer establishes, maintains, and synchronizes the interactions between communicating devices.
A) session
B) physical
C) transport
D) network
43. A port address in TCP/IP is _____ bits long.
A) 16
B) 32
C) 48
D) none of the above
44. In the OSI model, encryption and decryption are functions of the _____ layer.
A) application
B) presentation
C) session
D) transport
45. TCP/IP is a _____ hierarchical protocol suite developed ____ the OSI model.
A) five-layer; before
B) six-layer; before
C) seven-layer; before

D) five-layer; after

46. The _____ address, also known as the link address, is the address of a node as defined by its LAN or WAN.

A) logical
B) port
C) physical
D) none of the above

47. The _____ model shows how the network functions of a computer ought to be organized.

A) ANSI
B) CCITT
C) ISO
D) OSI

48. The _____ layer ensures interoperability between communicating devices through transformation of data into a mutually agreed upon format.

A) network
B) presentation
C) transport
D) data link