
CHAPTER 3

OSI Model

3.1 REVIEW QUESTIONS

1. Physical, data link, and network layers.
2. Session, presentation, and application.
3. The transport layer is responsible for source-to-destination delivery of the entire message, whereas the network layer oversees delivery of individual packets of data irrespective of their relationship to each other and to the entire message.
4. ISO is an organization. OSI is a model for designing a network architecture.
5. Physical, data link, network, transport, session, presentation, and application.
6. Peer-to-peer processes are processes on 2 or more devices communicating at a given layer.
7. Each layer calls upon the services of the layer just below it using interfaces between each pair of adjacent layers.
8. Headers and trailers are control data added at the beginning and the end of each data unit at each layer of the sender and removed at the corresponding layers of the receiver. They provide source and destination addresses, synchronization points, information for error detection, etc.
9. The OSI layers can be grouped into:
 - a. network support layers: physical, data link, network
 - b. user support layers: session, presentation, application
 - c. transport layer: functions as a liaison between the two groups of layers
10. The physical layer is responsible for transmitting a bit stream over a physical medium. It is concerned with
 - a. physical characteristics of the media
 - b. representation of bits
 - c. type of encoding
 - d. synchronization of bits
 - e. transmission rate and mode

- f. the way devices are connected with each other and to the links
11. The data link layer is responsible for
 - a. framing data bits
 - b. providing the physical addresses of the sender/receiver
 - c. data rate control
 - d. detection and correction of damaged and lost frames
 12. The network layer is concerned with delivery of a packet across multiple networks; therefore its responsibilities include
 - a. providing logical addressing
 - b. routing
 13. The transport layer oversees end-to-end delivery of the entire message to the correct process on the receiving node. It is responsible for
 - a. dividing the message into manageable segments
 - b. reassembling it at the destination,
 - c. flow and error control
 14. Connection establishment, data transfer, and connection release.
 15. The physical address is the local address of a node; it is used by the data link layer to deliver data from one node to another within the same network. The logical address defines the sender and receiver at the network layer and is used to deliver messages across multiple networks. The service-point address identifies the application process on the station.
 16. The session layer is responsible for dialog control and adding synchronization points into a data stream.
 17. The dialog controller is to provide communication between devices either in a full- or half-duplex mode.
 18. The presentation layer is responsible for syntax and semantics of the message, translation, encryption/decryption, and compression/decompression.
 19. Translation allows interoperability between systems using different encoding methods.
 20. The application layer services include network virtual terminal, file transfer, remote access, shared database management, and mail services.
 21. The application, presentation, and session layers of the OSI model are represented by the application layer in TCP-IP. The lowest four layers of OSI correspond to the TCP/IP layers.

3.2 MULTIPLE CHOICE QUESTIONS

22. b 23. c 24. b 25. b 26. a 27. b 28. c 29. b 30. d 31. b
32. b 33. a 34. c 35. a 36. c 37. c 38. a 39. b 40. c 41. d
42. c 43. b 44. a 45. d

3.3 EXERCISES

46.
a. network
b. transport, data link layers
c. application
d. application
e. presentation
f. network
47.
a. transport
b. network
c. data link
d. application
e. physical
48.
a. application
b. data link, transport
c. physical
d. data link
e. transport
49.
a. presentation
b. session
c. data link, transport
d. session
e. presentation
f. session

