

CHAPTER 2 : Network Models

Solutions to Review Questions

Review Questions

1. The *application*, *presentation*, and *session* layers of the OSI model are represented by the *application* layer in the Internet model. The lowest four layers of OSI correspond to the Internet model layers.
2. Each layer calls upon the *services* of the layer just below it using interfaces between each pair of adjacent layers.
3. The *network layer* is concerned with delivery of a packet across multiple networks; therefore its responsibilities include
 - a. *providing host-to-host addressing*
 - b. *routing*
4. The *transport layer* oversees the process-to-process delivery of the entire message. It is responsible for
 - a. *dividing the message into manageable segments*
 - b. *reassembling it at the destination*
 - c. *flow and error control*
5. The *application layer services* include *file transfer*, *remote access*, *shared database management*, and *mail services*.
6. 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 port address (service-point) identifies the application process on the station.
7. The *transport layer* is responsible for *process-to-process* delivery of the entire

message, whereas the network layer oversees *host-to-host* delivery of individual packets.

8. 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*

9. *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.

10. The Internet model, as discussed in this chapter, include *physical*, *data link*, *network*, *transport*, and *application* layers.

11. The network support layers are the *physical*, *data link*, and *network* layers.

12. 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*

13. The *application* layer supports the user.

14. *Peer-to-peer processes* are processes on two or more devices communicating at a same layer