UEEN2013-2423 TCP/IP Network Fundamentals

TUTORIAL FOR TOPIC 1

MULTIPLE CHOICE

1. The _____ is the physical path over which a message travels.
   a. protocol
   b. medium
   c. signal
   d. path

2. A _____ connection provides a dedicated link between two devices.
   a. tertiary
   b. multipoint
   c. primary
   d. point-to-point

3. One of the primary disadvantages in a _____ topology is that one break in the cable media can stop all data transmissions on the network segment.
   a. Mesh
   b. Star
   c. Bus
   d. Dual-ring (FDDI)

4. In _____ transmission, the channel capacity is equally shared by both sending and receiving devices at all times on a circuit.
   a. Simplex
   b. Half-duplex
   c. Full-duplex
   d. Half-simplex

5. Which topology always requires a multi-point connection?
   a. Mesh
   b. Star
   c. Bus
   d. Ring

6. The motivation(s) for a business to invest, install and manage a network within the organizational environment are:
   a. To provide a conduit for synchronous and asynchronous communication.
   b. So people can share information efficiently and effectively.
   c. To share and distribute files, hardware and software.
   d. All of the above.

7. The organization that is a multi-national body whose membership is composed of standards organization's members and committees from various countries throughout the world is:
   a. FCC
   b. IEEE
   c. ITU-T
   d. ISO

8. The information to be communicated in a data communication system is the _____.
   a. medium
   b. protocol
   c. message
   d. transmission

9. Frequency of failure and network recovery time after a failure are measures of the _____ of a network.
   a. performance
   b. reliability
   c. security
   d. feasibility

10. The process-to-process delivery of the entire message is the responsibility of the _____ layer.
   a. network
   b. transport
   c. data link
   d. physical

11. The _____ layer is closest to the transmission medium.
   a. network
   b. physical
   c. data link
   d. transport

12. Mail services are available to network users through the _____ layer.
   a. application
   b. session
   c. data link
   d. physical

13. The main difference(s) between the Internet and OSI models is/are:
   a. the Internet model was designed by the Department of Defense (DoD) and the OSI model was designed by the International Organization for Standardization (ISO)
   b. the Internet model is a five layer model and the OSI model is a seven layer model
   c. the Internet model probably best describes WANs and the OSI model probably best describes LANs.
   d. All of the above.

14. When independent networks or links are connected to create an internetwork, the connecting devices:
   a. always reformat the encapsulated message.
   b. immediately forward all incoming messages along to the destination address without reading the destination address.
   c. route or switch the packets to their final destination.
   d. None of the above.

15. The information contained in the data link layer allow for:
   a. framing or dividing the stream of bits into data units called frames.
   b. physical addressing providing node to node information.
   c. Flow control ensuring that the data rate timing between sender and receiver is maintained.
   d. All of the above.

16. The physical layer defines the:
   a. characteristics of the interface between the devices and the transmission media.
   b. type of transmission medium.
   c. acceptance of encoded electrical or optical signals.
   d. All of the above.

17. The _____ layer lies between the network layer and the application layer.
    a. data link
    b. physical
    c. transport
    d. None of the above.

18. The _____ layer changes streams of bits into electromagnetic signals.
    a. physical
    b. data link
    c. network
    d. transport

19. When data are transmitted from computing device A to computing device B,. the header from A's layer 4 is read by B's _____ layer.
    a. session
    b. transport
    c. physical
    d. application

20. On the incoming side of the internetwork, as the data packet moves from the lower to the upper layers, headers are _____.
    a. added
    b. subtracted
    c. rearranged
    d. modified

21. Protocols are:
    a. the rules that govern data transmissions within and between networks.
    b. required for successful network to network transmission.
    c. designed so network devices and software can interoperate with other network devices and their software.
    d. All of the above.

SHORT ANSWER

1. Draw a hybrid topology with a star backbone and three ring networks

2. What will happen when a single cable is at fault in any topology?

    a. Mesh:
    b. Star:
    c. Bus:
    d. Ring:

3. Match the following to one of the Internet layers

    a. Reliable process-to-process data transportation
    b. Network selection
    c. Routing
    d. Provides user services such as email and file transfer
    e. Transmission of bit stream across physical medium.

4. The following questions related to physical address.

   a. What command can be used to obtain the physical address of your PC?
   b. Write down your PC's physical address
   c. Which OSI layer is responsible for physical address?

5. Use Internet to find the port numbers for the following protocols.

   a. http
   b. https
   c. imap
   d. bgp