

Question Bank accompanying Business Data Communications

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Chapter 2 – Physical Layer

1. Signaling is ____.

- a) the transmission path over which information propagates
- b) wiring cables between locations
- c) combining multiple signals for transmission over one medium
- d) converting data to signals for transmission over physical media

Answer: (d)

2. A signal is ____.

- a) information added to data to remove errors
- b) cables connecting networked locations
- c) detectable transmitted energy that can be used to carry information
- d) converting data to signals for transmission over physical media

Answer: (c)

3. The only layer in the TCP/ IP stack that deals with the limitations of nature is ____.

- a) the data link layer
- b) the physical layer
- c) the network layer
- d) the transport layer

Answer: (b)

4. Signals in copper wire are transmitted as ____.

- a) sound signals
- b) light signals
- c) electrical signals.
- d) smoke signals

Answer: (c)

5. A physical medium is ____.

- a) the transmission path over which a signal propagates
- b) the method of combining multiple signals for transmission over one medium
- c) used to convert data to signals for transmission
- d) detectable transmitted energy that can be used to carry information

Answer: (a)

6. As a physical medium, copper possesses all of the following properties except ____.

- a) copper is relatively abundant
- b) copper is a good conductor of electricity
- c) copper is relatively inexpensive
- d) copper can transmit information over very long distances

Answer: (d)

7. The term UTP stands for ____.

- a) unshielded telephone pair
- b) unshielded twisted pair
- c) uncovered twisted pair
- d) uncovered telephone pair

Answer: (b)

8. A CAT 5 cable has ____ wires.

- a) 4
- b) 6
- c) 8
- d) 10

Answer: (c)

9. A CAT 5 cable is terminated using connectors called ____.

- a) RJ 11 connectors
- b) RJ 19 connectors
- c) RJ 45 connectors
- d) RJ 54 connectors

Answer: (c)

10. As a physical medium, optical fiber possesses all of the following properties except ____.

- a) it is relatively light in weight
- b) it can carry signals for long distances without the need for repeaters
- c) it is relatively inexpensive
- d) it is as robust as copper in withstanding abuse

Answer: (d)

11. Single mode fiber is preferred over multi-mode fiber for short distances.

- a) True
- b) False

Answer: (b)

12. Data is converted to signals for transmission because ____.

- a) data is expensive to transport over physical media
- b) there is no known method to transport data over physical media
- c) signals are inexpensive to transport over physical media
- d) network carriers prefer to transport signals

Answer: (b)

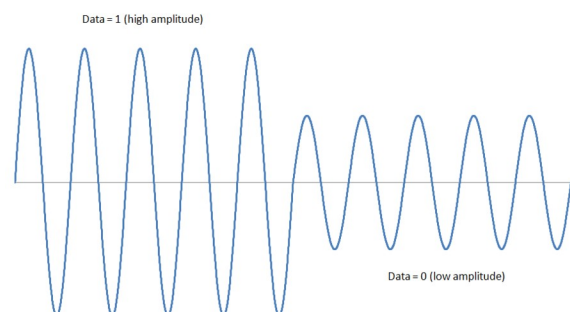
13. Good signals have all the following properties except ____.

- a) good signals do not need to be multiplexed
- b) good signals are efficient at using bandwidth
- c) good signals are resistant to noise
- d) good signals are easy to detect at the receiver's end

Answer: (a)

14. The figure shows an example of ____.

- a) digital data transmitted using a digital signal
- b) digital data transmitted using an analog signal
- c) analog data transmitted using a digital signal



- d) analog data transmitted using an analog signal

Answer: (b)

15. Amplitude is a measure of ____.

- a) the height of a sine wave
- b) the number of cycles made by a sine wave in one second
- c) the position of a sine wave at the start time
- d) None of the above

Answer: (a)

16. Modulation is the process of ____.

- a) spinning a wheel to generate a sine wave
- b) increasing the amplitude of a sine wave
- c) increasing the frequency of a sine wave
- d) changing one or more properties of a sine wave in response to data

Answer: (d)

17. Quadrature amplitude modulation ____.

- a) is another name for amplitude modulation
- b) combines amplitude modulation with phase modulation
- c) combines amplitude modulation with frequency modulation
- d) None of the above

Answer: (b)

18. Binary signals are preferred over other forms of signals (ternary, decimal etc) because ____.

- a) binary signals are the easiest to detect reliably by the receiver
- b) binary signals can carry the most amount of information in a given time period
- c) binary signals are the fastest known means of transmitting data
- d) binary signals are the easiest to generate for the sender

Answer: (a)

19. A bit ____.

- a) transforms elements from one set of elements to another set

- b) generates sine waves for transmission over a medium
- c) is the unit of information that designates one of two possible states
- d) changes one or more properties of a sine wave in response to data

Answer: (c)

20. Coding is ____.

- a) the unit of information
- b) the transformation of elements from one set of elements to another set
- c) the generation of sine waves for transmission over a medium
- d) changing one or more properties of a sine wave in response to data

Answer: (b)

21. Noise is ____.

- a) the transformation of elements from one set of elements to another set
- b) the generation of sine waves for transmission over a medium
- c) changing one or more properties of a sine wave in response to data
- d) any disturbance that interferes with the normal operation of a device

Answer: (d)

22. The ASCII code is used to encode ____.

- a) characters in the English alphabet
- b) characters in the Chinese language
- c) characters in all languages
- d) characters in most languages spoken around the world

Answer: (a)

23. Unicode is used to encode ____.

- a) characters in the English alphabet only
- b) characters in the Chinese language only
- c) characters in most languages
- d) characters in the 5 most common languages spoken around the world

Answer: (c)

24. In FDM ____.

- a) signals from each channel are sent at a specified frequency
- b) signals from each channel are sent at a specified amplitude
- c) signals from each channel are sent at a specified phase
- d) signals from each channel are sent at a specified time

Answer: (a)

25. In TDM _____.

- a) signals from each channel are sent at a specified frequency
- b) signals from each channel are sent at a specified amplitude
- c) signals from each channel are sent at a specified phase
- d) signals from each channel are sent at a specified time

Answer: (d)