

KNOWLEDGE PROBE 6: SYSTEMS VIEW OF ELECTRONICS

Interfaces

Learning Objectives

1. Define interface.
 2. Describe the different types of connections used between circuits, equipment, and systems.
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1. An interface is a(n)
 - a. Input
 - b. Output
 - c. Power connection
 - d. Standard connection between two circuits
 2. The two types of digital interfaces are
 - a. Analog and binary
 - b. Combinational and sequential
 - c. Fast and slow
 - d. Serial and parallel
 3. Which of the following usually define an interface?
 - a. Connector type
 - b. Speed or frequency response
 - c. Voltage levels
 - d. All of the above
 4. Which types of signals are carried over low frequency interfaces?
 - a. Audio
 - b. DC
 - c. Radio
 - d. Video
 5. What is the wavelength of a 150 MHz signal?
 - a. 1.5 meters
 - b. 2 meters
 - c. 3 meters
 - d. 4.5 meters
 6. A cable one foot long is a transmission line at an operating frequency of 800 MHz.
 - a. True
 - b. False



7. The most common transmission line is
 - a. AC power cable
 - b. Coax cable
 - c. Open wire line
 - d. Waveguide
8. The equivalent circuit of a transmission line is similar to a(n)
 - a. Capacitor
 - b. Inductor
 - c. Low pass filter
 - d. Transformer
9. The most common coax characteristic impedance is
 - a. 50 ohms
 - b. 93 ohms
 - c. 150 ohms
 - d. 300 ohms
10. Twisted pair cable cannot act as a transmission line.
 - a. True
 - b. False
11. A parallel group of multiple connections is generally referred to as a
 - a. Bus
 - b. Cable
 - c. Group connector
 - d. Ribbon cable
12. What happens if a transmission line is not properly terminated?
 - a. High attenuation
 - b. Lower output voltage
 - c. Nothing
 - d. Signal reflection that causes distortion
13. The maximum speed of a parallel bus is limited primarily by
 - a. Clock frequency
 - b. Length of bus
 - c. Speed of logic circuits
 - d. Type of cable used
14. Most parallel buses operate at a data rate less than
 - a. 10 MHz
 - b. 25 MHz
 - c. 133 MHz
 - d. 200 MHz



15. The parallel bus most used in a personal computer is the
 - a. GPIB
 - b. LVDS
 - c. PCI bus
 - d. PCMCIA
16. The primary advantage of a serial bus is
 - a. It can handle more data
 - b. It is faster than a parallel bus
 - c. More variations are possible
 - d. Only one wire is needed
17. If the bit time on a serial signal is 150 nS, what is the data rate?
 - a. 1.5 Mbps
 - b. 6.66 Mbps
 - c. 15 Mbps
 - d. 66.6 Mbps
18. What is the bit time of a 622 Mbps serial signal?
 - a. 0.66 nS
 - b. 1.2 nS
 - c. 1.6 nS
 - d. 1.8 nS
19. Which serial interface is commonly used on PCs for peripheral connections?
 - a. PCI
 - b. RS-485
 - c. Sonet
 - d. USB
20. A serial interface widely used in LANs is
 - a. Ethernet
 - b. RS-232
 - c. RS-485
 - d. Sonet
21. A widely used fiber optical serial interface is called
 - a. Ethernet
 - b. RS-232
 - c. RS-485
 - d. Sonet



22. Which of the following is NOT used to connect circuits on a PC board or over short distances?
- a. CAN
 - b. I²C
 - c. PCI
 - d. USB