

Reading Comprehension Passage 24

This sample text has been prepared for the Master of Electrical Engineering entrance exam by Alpha Consulting Group.

A signal as referred to in communication systems, signal processing, and electrical engineering is a function that conveys information about the behavior or attributes of some phenomenon. In the physical world, any quantity variation in time or variation in space (such as an image) is potentially a signal that might provide information on the status of a physical system, or convey a message between observers, other possibilities. The term "signal" includes, among others, audio, video, speech, image, communication, geophysical, sonar, radar, medical and musical signals. A signal is physical quantity which varies with respect to time, space and contains information from source to destination. Other examples of signals are the output of a thermocouple, which conveys temperature information, and the output of a pH meter which conveys acidity information.

Typically, electrical signals are often provided by a sensor. Transducer is a device which converts a form of energy to another form of energy but sensor only converts a form of energy to electrical parameters. For example, a microphone is a sensor and converts an acoustic signal to a voltage waveform, and a speaker does the reverse but it is not a type of sensor. The formal study of the information content of signals is the field of information theory. The information in a signal is usually accompanied by noise. The term noise usually means an undesirable random disturbance, but is often extended to include unwanted signals conflicting with the desired signal (such as crosstalk). The prevention of noise is covered in part under the heading of signal integrity. The separation of desired signals from a background is the field of signal recovery, one branch of which is estimation theory, a probabilistic approach to suppressing random disturbances.

Questions

1. A speaker converts

- 1) A voltage form to acoustic signal form.
- 2) An acoustic signal to a voltage form.
- 3) A voltage form to another amplified voltage.
- 4) A low level acoustic signal to high level acoustic signal.

2. According to the text, which of the following statement is valid?

- 1) A signal is physical quality which varies with respect to time and space.
- 2) Noise is unwanted signal conflicting with the desired signal.
- 3) Information theory field discusses about transducers.
- 4) Image is not a type of signal information.

3. What does the word “conveys” mean in the second line?

- 1) Analyses**
- 2) Shows**
- 3) Carries**
- 4) Collects**

4. Which definition is right for “transducer”? Transducer converts...

- 1) An acoustic signal to voltage waveform.**
- 2) A voltage waveform to another form of energy.**
- 3) A form of energy to voltage waveform.**
- 4) A form of energy to another form of energy.**

5. What does the sentence “The prevention of noise is covered in part under the heading of signal integrity” mean?

- 1) By “signal integrity” we could prevent of noise.
- 2) “Signal integrity” is covered by noise.
- 3) Noise is a type of cover which is under the “signal integrity”.
- 4) Noise covers the signals and we couldn't prevent it.

Answers

1==> 1

2==> 2

3==> 3

4==> 4

5==> 1