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1. The type of systems which are characterized by input and the output quantized at certain levels are called as
a) analog
b) discrete
c) continuous
d) digital
View Answer

Answer: b
Explanation: Discrete systems have their input and output values restricted to enter some quantised/discretized levels.

2. The type of systems which are characterized by input and the output capable of taking any value in a particular set of values are called as
a) analog
b) discrete
c) digital
d) continuous
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Answer: d
Explanation: Continuous systems have a restriction on the basis of the upper bound and lower bound, but within this set, the input and output can assume any value. Thus, there are infinite values attainable in this system

3. An example of a discrete set of information/system is
a) the trajectory of the Sun
b) data on a CD
c) universe time scale
d) movement of water through a pipe
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Answer: b
Explanation: The rest of the parameters are continuous in nature. Data is stored in the form of discretized bits on CDs.

4. A system which is linear is said to obey the rules of
a) scaling
b) additivity
c) both scaling and additivity
d) homogeneity
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Answer: c
Explanation: A system is said to be additive and scalable in order to be classified as a linear system.

5. A time invariant system is a system whose output
a) increases with a delay in input
b) decreases with a delay in input
c) remains same with a delay in input
d) vanishes with a delay in input
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Answer: c
Explanation: A time invariant system's output should be directly related to the time of the output. There should be no scaling, i.e. y(t) = f(x(t)).

6. Should real time instruments like oscilloscopes be time invariant?
a) Yes
b) Sometimes
c) Never
d) They have no relation with time variance
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Answer: a
Explanation: Oscilloscopes should be time invariant, i.e they should work the same way everyday, and the output should not change with the time at which it is operated.

7. All real time systems concerned with the concept of causality are
a) non causal
b) causal
c) neither causal nor non causal
d) memoryless
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Answer: b
Explanation: All real time systems are causal, since they cannot have perception of the future, and only depend on their memory.

8. A system is said to be defined as non causal, when
a) the output at the present depends on the input at an earlier time
b) the output at the present does not depend on the factor of time at all
c) the output at the present depends on the input at the current time
d) the output at the present depends on the input at a time instant in the future
View Answer

Answer: d
Explanation: A non causal system's output is said to depend on the input at a time in the future.

9. When we take up design of systems, ideally how do we define the stability of a system?
a) A system is stable, if a bounded input gives a bounded output, for some values of the input
b) A system is unstable, if a bounded input gives a bounded output, for all values of the input
c) A system is stable, if a bounded input gives a bounded output, for all values of the input
d) A system is unstable, if a bounded input gives a bounded output, for some values of the

input
View Answer

Answer: c
Explanation: For designing a system, it should be kept in mind that the system does not blow out for a finite input. Thus, every finite input should give a finite output.

10. All causal systems must have the component of
a) memory
b) time invariance
c) stability
d) linearity
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Answer: a
Explanation: Causal systems depend on the functional value at an earlier time, compelling the system to possess memory.