

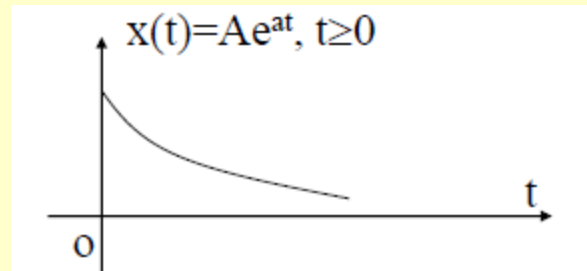
UNIT-1

(Lecture-1)

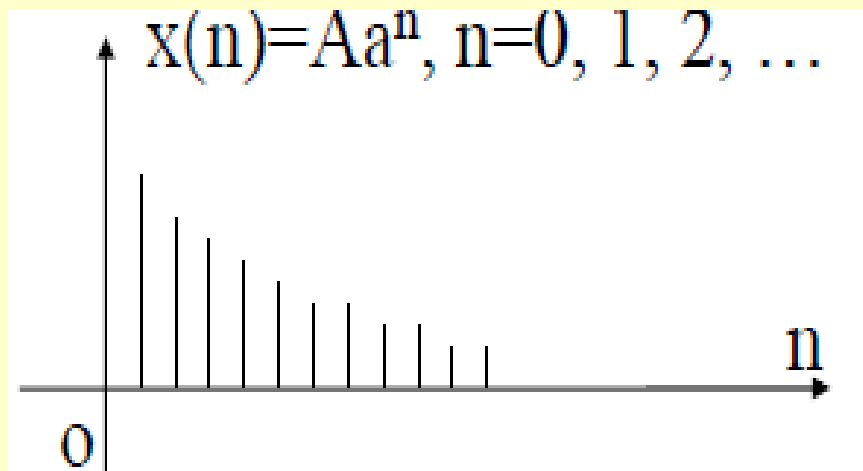
Signal Analysis

Signals

- A Signal is the function of one or more independent variables that carries some information to represent a physical phenomenon.
- A continuous-time signal, also called an analog signal, is defined along a continuum of time.



A discrete-time signal is defined at discrete times.



Classification of Signals

- Deterministic & Non Deterministic Signals
- Periodic & A periodic Signals
- Even & Odd Signals
- Energy & Power Signals

Classification of Signals

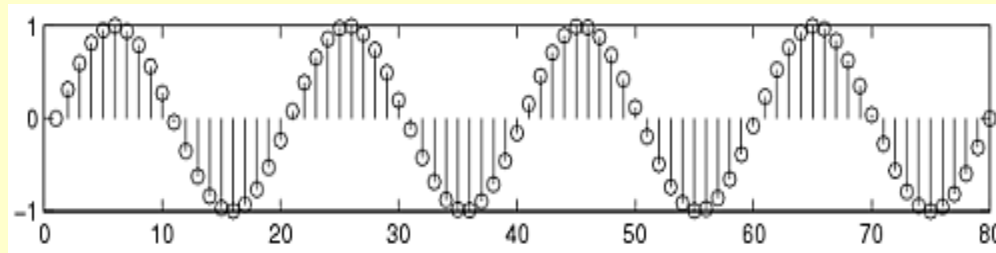
- **Deterministic & Non Deterministic Signals**
- Periodic & A periodic Signals
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Deterministic & Non Deterministic Signals

Deterministic signals

- Behavior of these signals is predictable w.r.t time
- There is no uncertainty with respect to its value at any time.
- These signals can be expressed mathematically.

For example $x(t) = \sin(3t)$ is deterministic signal.



Deterministic & Non Deterministic Signals Contd.

Non Deterministic or Random signals

- Behavior of these signals is **random** i.e. not predictable w.r.t time.
- There is an uncertainty with respect to its value at any time.
- These signals can't be expressed mathematically.
- For example **Thermal Noise** generated is non deterministic signal.

