SIGNAL REPRESENTATIONS:-

Introduction

Signals are fundamental concepts in communication systems and data processing, as they are used to represent and transmit information in the form of electrical, acoustic, optical, or digital waves. Mathematically, a signal can be defined as a function that depends on a variable such as time or space.

Signals can take various forms; they may be continuous or discrete, periodic or aperiodic, deterministic or random. This diversity makes the study and representation of signals an essential step for engineering students, as it forms the basis for understanding more advanced topics in signal processing and communications.

Laboratory Objectives

- To understand the concept and types of signals.
- To distinguish between continuous-time and discrete-time signals.
- To represent and plot signals using **MATLAB**.
- To understand and analyze the basic properties of signals graphically.

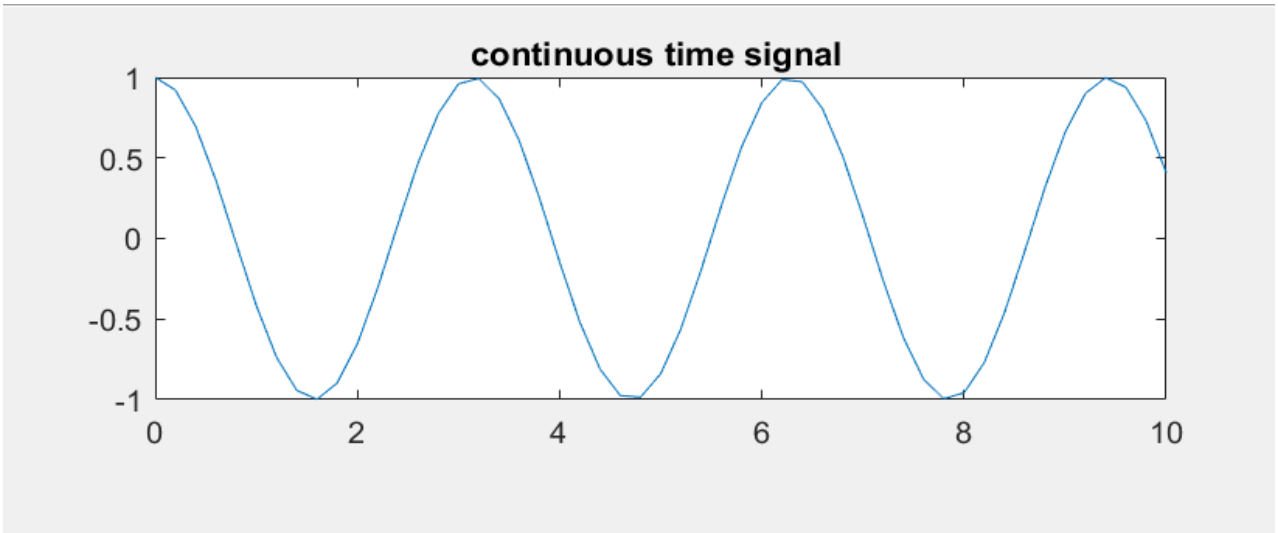
Types of Signals

- Continuous and Discrete Signals
- Periodic and Aperiodic Signals
- Deterministic and Random Signals
- Even and Odd Signals
- Finite and Infinite Signals

1) Continuous and Discrete Signals

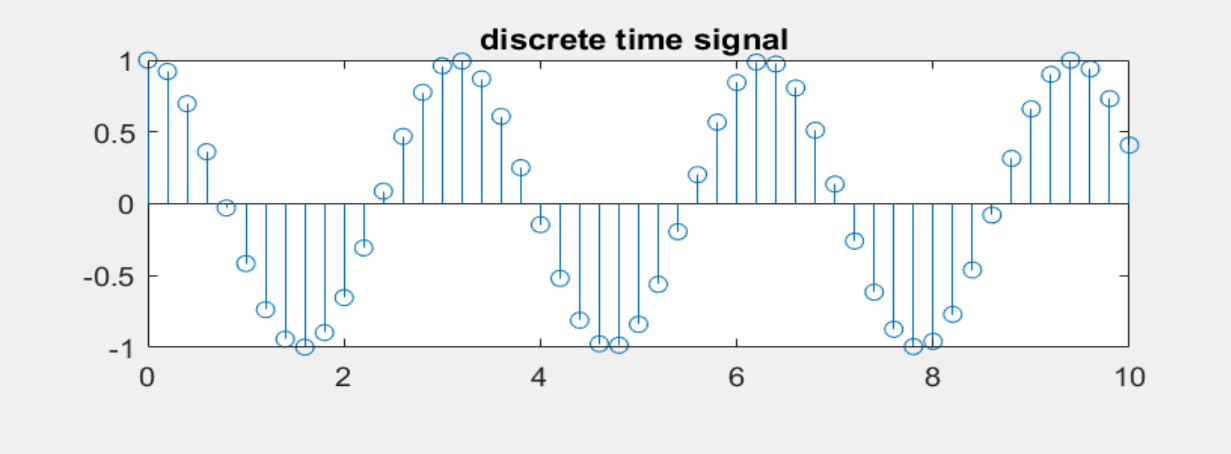
Part (1): Continuous time signal

```
Close all

Clear all

Clc

t= 0:0.2:10

f=2

a=1

y=a*cos(f*t);

subplot (2,1,1)

plot(t,y)

title ('continuous time signal ')
```



Part (2) Discrete time signal

```
Close all

Clear all

Clc

t= 0:0.2:10

f=2

a=1

y=a*cos(f*t);

subplot(2,1,1)

stem(t,y)

title ('discrete time signal ')
```



Discussion:

Q1/ Generate cosine signal with the following parameters:

t = 0:0.2:12

a = 5

f = 4Hz

The figure must be having name, axes titles?