



Chittagong University of Engineering & Technology

Department of Electrical and Electronic Engineering

NAME OF THE EXPERIMENT/REPORT:

Introduction to elementary signals(impulse,step,ramp and parabolic signal) and their generation in Matlab.

COURSE NO. : **EEE-496**

COURSE TITLE : **Digital signal processing.**

EXPERIMENT NO. : **02**

DATE OF EXPERIMENT : **26.05.2022**

DATE OF SUBMISSION : **2.6.2022**

REMARKS

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LEVEL : **04**

TERM : **01**

SECTION : **A**

GROUP : **A₁ (01)**

[Type the company name]

Problem-1:- Plotting of an Impulse signal.

MATLAB Code:-

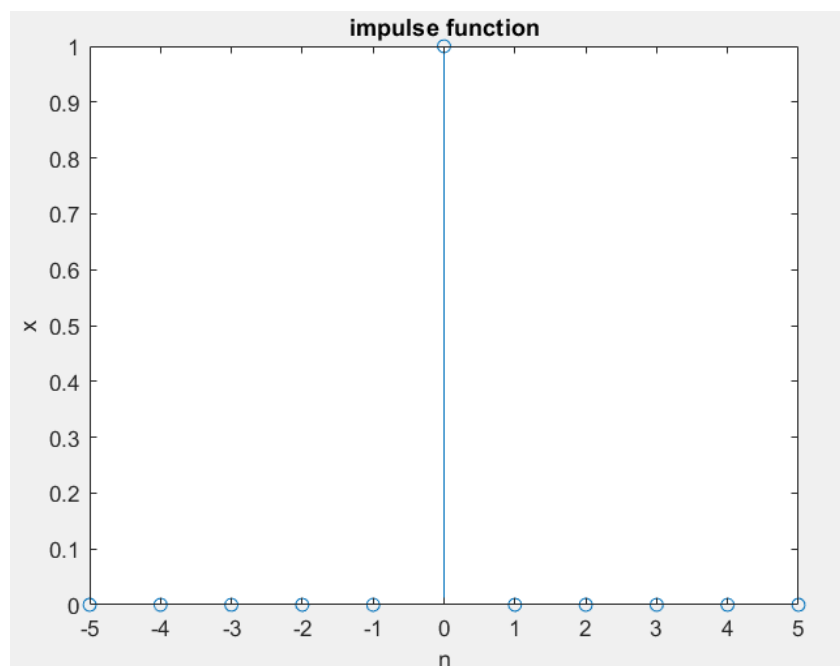
a. :-Code for making an impulse function

```
Editor - E:\all matlab file\2nd report ahsan sir\impls.m
impls.m x impulseplot.m +
1 function out=impls(t);
2     if t==0
3         out=1
4     else
5         out=0
6     end
```

b. :-Code for plotting an impulse signal.

```
Editor - E:\all matlab file\2nd report ahsan sir\impulseplot.m
impls.m x impulseplot.m +
1 clc;
2 clear all;
3 close all;
4 n=-5:5;
5 x=zeros(1,length(n))
6 for i=1:length(n)
7     x(i)=impls(n(i))
8 end
9 title('impulse function')
10 stem(n,x)
11 xlabel('n');ylabel('x');title('impulse function');
```

OUTPUT:-



[Type the company name]

Problem-2:- Plotting of an step signal.

MATLAB Code:-

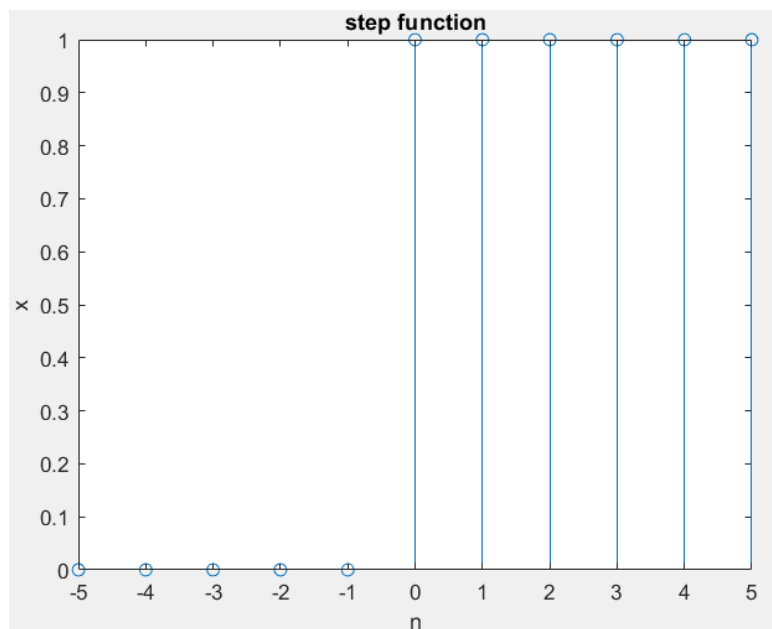
a. :-Code for making an step function

```
Editor - E:\all matlab file\2nd report ahsan sir\step.m
impls.m x impulseplot.m x step.m x ste
1 function out=step(t);
2     if t>=0
3         out=1
4     else
5         out=0
6     end
```

b. :-Code for plotting an step signal.

```
Editor - E:\all matlab file\2nd report ahsan sir\stepplot.m
impls.m x impulseplot.m x step.m x stepplot.m x +
1 clc;
2 clear all;
3 close all;
4 n=-5:5;
5 x=zeros(1,length(n))
6 for i=1:length(n)
7     x(i)=step(n(i))
8 end
9 stem(n,x);
10 xlabel('n');ylabel('x');title('step function');
```

OUTPUT:-



[Type the company name]

Problem-3:- Plotting of an ramp signal.

MATLAB Code:-

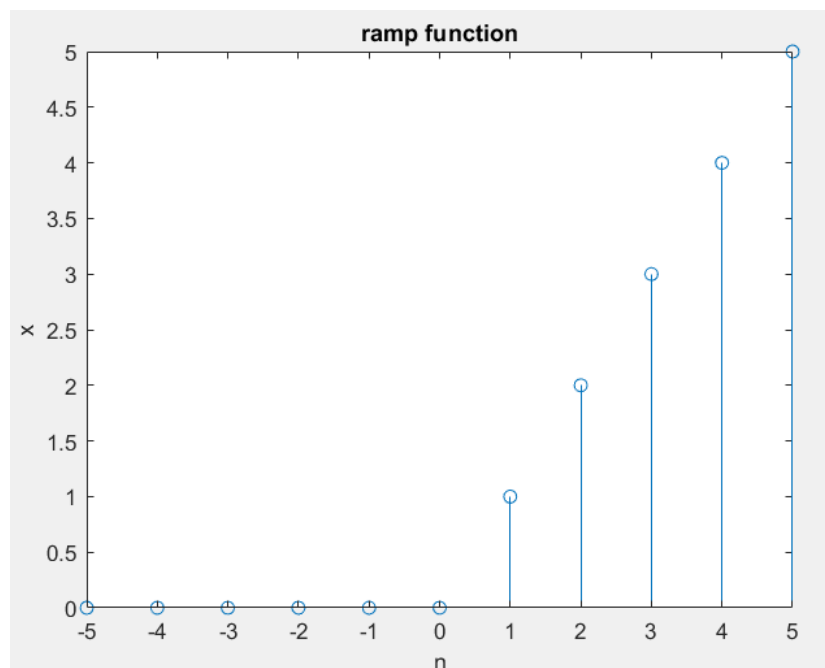
a. :-Code for making an ramp function

```
Editor - E:\all matlab file\2nd report ahsan sir\ramp.m
ramp.m x rampplot.m x +
1 function out=ramp(t);
2     if t>=0
3         out=t;
4     else
5         out=0;
6     end
```

b. :-Code for plotting an ramp signal.

```
Editor - E:\all matlab file\2nd report ahsan sir\rampplot.m
ramp.m x rampplot.m x +
1 clc;
2 clear all;
3 close all;
4 n=-5:5;
5 x=zeros(1,length(n))
6 for i=1:length(n)
7     x(i)=ramp(n(i))
8 end
9 stem(n,x);
10 xlabel('n');ylabel('x');title('ramp function');
```

OUTPUT:-



[Type the company name]

Problem-4:- Plotting of an parabolic signal.

MATLAB Code:-

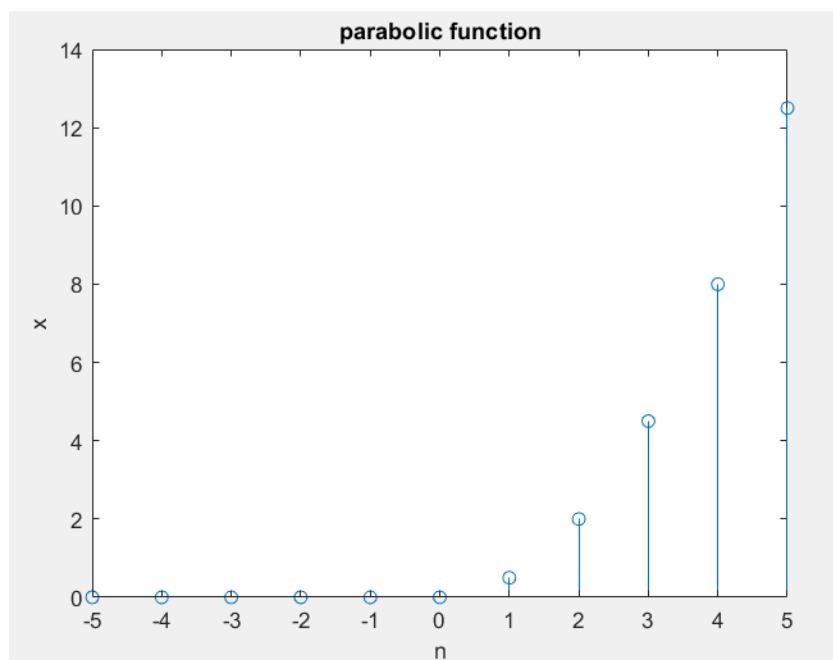
a. :-Code for making an parabolic function

```
Editor - E:\all matlab file\2nd report ahsan sir\parabolic.m
parabolic.m x parabolicplot.m +
1 function out=parabolic(t);
2     if t>=0
3         out=0.5*t^2;
4     else
5         out=0;
6     end
```

b. :-Code for plotting an parabolic signal.

```
Editor - E:\all matlab file\2nd report ahsan sir\parabolicplot.m
parabolic.m x parabolicplot.m +
1 clc;
2 clear all;
3 close all;
4 n=-5:5;
5 x=zeros(1,length(n))
6 for i=1:length(n)
7     x(i)=parabolic(n(i))
8 end
9 stem(n,x);
10 xlabel('n');ylabel('x');title('parabolic function');
```

OUTPUT:-



[Type the company name]

Problem-5:- Plotting of an Door like signal.

MATLAB Code:-

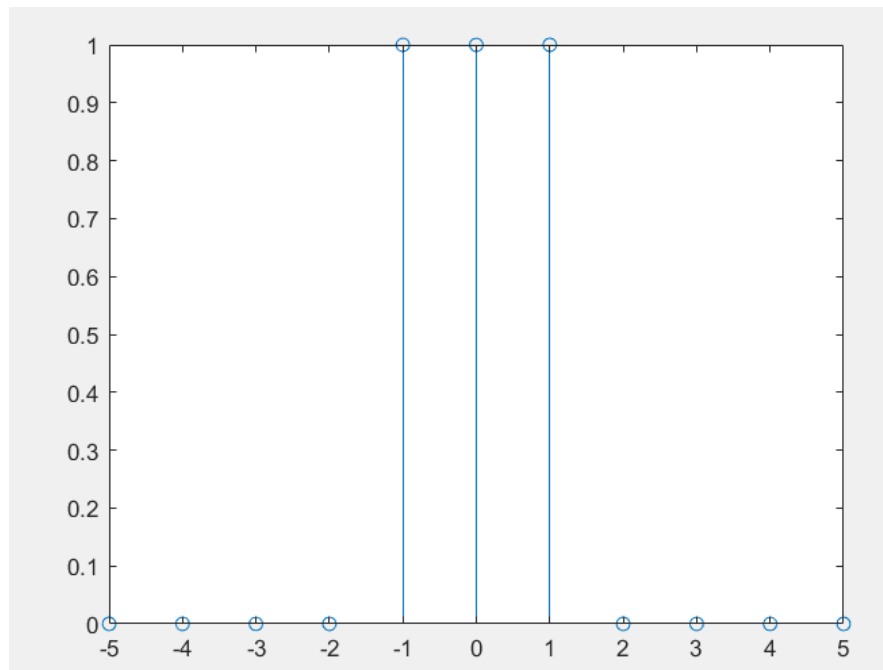
a. :-Code for making an door function

```
1 function out=udoor(t)
2     if t>=-1 && t<=1
3         out=1;
4     else
5         out=0;
6     end
```

b. :-Code for plotting an door like signal.

```
1 clc
2 clear all
3 close all
4
5 n=-5:1:5;
6 x=zeros(size(n));
7 for i=1:length(n);
8     x(i)=udoor(n(i));
9 end
10 stem(n,x);
```

OUTPUT:-



[Type the company name]

Problem-6:- Plotting of an gate signal.

MATLAB Code:-

a. :-Code for making an gate function

```
gate.m  ugate.m  +
1  function out =ustep1(t)
2      if -1>t && t<2
3          out=1;
4      else
5          out=0;
6      end
```

b. :-Code for plotting an gate signal.

```
gate.m  ugate.m  +
1  clc
2  close all
3
4  n=-5:1:5;
5  x=zeros (size (n));
6  for i=1:length(n)
7      x(i)=ustep1(n(i));
8  end
9  stem(n,x)
```

OUTPUT:-

