

1. Program to generate common CONTINUOUS time signals (MATLAB CODE)

```
//UNIT IMPULSE SIGNAL
clc ;
clear all;
close ;
N =5;
t1 = -5:5;
x1 =[zeros(1,N),ones(1,1),zeros(1,N)];
subplot(2,3,1);
plot(t1,x1)
xlabel('time');
ylabel('Amplitude');
title('Unit impulse signal');
```

```
//UNIT STEP SIGNAL
t2 =0:4;
x2= ones (1,5);
subplot (2,3,2);
plot (t2,x2);
xlabel ('time');
ylabel ('amplitude');
title ('Unit Step Continuous signal');
title ('Unit step signal');
```

```
//EXPONENTIAL SIGNAL
t3 =0:1:20;
x3=exp(-t3);
subplot (2 ,3 ,3);
plot (t3 ,x3);
xlabel ('time');
ylabel ('Amplitude');
title ('Exponential signal');
```

```
//UNIT RAMP SIGNAL
t4 = -0:20;
x4=t4;
subplot(2,3,4);
plot(t4,x4);
xlabel('time');
ylabel('Amplitude');
title('Unit ramp signal');
```

```
//SINUSOIDAL SIGNAL
t5 =0:0.04:1;
x5=sin(2* %pi *t5);
subplot (2,3,5);
plot (t5,x5);
title ('Sinusoidal signal');
xlabel ('time');
```

```

ylabel ('Amplitude');

//RANDOM SIGNAL
t6 = -10:1:20;
x6= rand (1,31) ;
subplot(2,3,6);
plot(t6,x6);
xlabel('time');
ylabel('Amplitude');
title('Random signal');

```

2. Program to generate common DISCRETE time sequences (MATLAB CODE)

```

//UNIT IMPULSE SIGNAL
clc ;
clear all;
close ;
N =5;
t1 = -5:5;
x1 =[zeros(1,N), ones(1,1),zeros(1,N)];
subplot (2 ,4 ,1);
plot2d3 (t1,x1)
xlabel ('time');
ylabel ('Amplitude');
title ('Unit impulse signal');

```

```

//UNIT STEP SIGNAL
t2 = -5:5;
x2 =[zeros(1,N), ones(1, N+1)];
subplot (2 ,4 ,2);
plot2d3 (t2,x2)
xlabel ('time');
ylabel ('Amplitude');
title ('Unit step signal');

```

```

//EXPONENTIAL SIGNAL
t3 =0:1:20;
x3=exp(-t3);
subplot (2,3,3);
plot2d3 (t3,x3);
xlabel ('time');
ylabel ('Amplitude');
title ('Exponential signal');

```

```

//UNIT RAMP SIGNAL
t4 =0:20;
x4=t4;
subplot (2 ,3 ,4);
plot2d3 (t4 ,x4);
xlabel ('time');

```

```

ylabel ('Amplitude');
title ('Unit ramp signal');

//SINUSOIDAL SIGNAL
t5 =0:0.04:1;
x5=sin (2*%pi*t5);
subplot (2,3,5);
plot2d3 (t5,x5);
title ('Sinusoidal signall')
xlabel ('time');
ylabel ('Amplitude');

//RANDOM SIGNAL
t6 = -10:1:20;
x6= rand (1 ,31) ;
subplot (2 ,3 ,6);
plot2d3 (t6,x6);
xlabel ('time');
ylabel ('Amplitude');
title ('Random signal');

```

3. Program for Convolution of two sequences (MATLAB CODE)

```

clc;
closeall;
clearall;
n1=-1:2;
x=[1 2 3 4];
subplot(3,1,1);
stem(n1,x);
xlabel('n');
ylabel('x(n)');
title('input sequence');
n2=-2:1;
h=[1 2 2 1];
subplot(3,1,2);
stem(n2,h);
xlabel('n');
ylabel('h(n)');
title('impulse sequence')

n3=-3:3;
y=conv(x,h);
disp(y)
subplot(3,1,3);
stem(n3,y);
xlabel('n');
ylabel('y(n)');
title('linear convolution')

```

4. Program for Time shifting and Time scaling of Unit step function (MATLAB CODE)

```
t=-10:0.01:10;
f=heaviside(t);
g=heaviside(t-3);
h=heaviside(t+4);
k=heaviside(-t);
l=heaviside(2*t);
m=heaviside(-2*t);
subplot(321)
plot(t,f)
grid
title('u[t]');
subplot(322)
plot(t,g)
grid
title('u[t-3]');
subplot(323)
plot(t,h)
grid
title('u[t+4]');
subplot(324)
plot(t,k)
grid
title('u[-t]');
subplot(325)
plot(t,l)
grid
title('u[2t]');
subplot(326)
plot(t,m)
grid
title('u[-2t]');
```

5. Program for Time shifting and Time scaling of Unit step sequence (MATLAB CODE)

```
n=-10:10;
f1=heaviside(n);
f2=heaviside(n+3);
f3=heaviside(n-3);
f4=heaviside(-n);
subplot(221)
stem(n,f1)
grid
title('u[n]');
subplot(222)
stem(n,f2)
grid
title('u[n+3]');
subplot(223)
```

```
stem(n,f3)
title('u[n-3]');
subplot(224)
stem(n,f4)
title('u[-n]');
```