

EXPERIMENT 1

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To write a MATLAB script to generate the following waveform (Discrete-time signal)

1. Unit Impulse function
2. Unit Step function
3. Ramp sequence
4. Exponential function
5. Sinusoidal sequence
6. Random Sequence

Code:

```
clc; clear; close all;

t = (-1:0.1:1);
x = (-3:0.1:3);

impulse = t==0;
unitstep = t>=0;
ramp = t.*unitstep;
exp = exp(t);
sine = sin(x);
rand = randi([0,1],1,21);

subplot(2,3,1);
stem(t,impulse)
xlabel('time')
ylabel('amplitude')
title('impulse function')

subplot(2,3,2);
stem(t,unitstep)
xlabel('time')
ylabel('amplitude')
title('unitstep function')

subplot(2,3,3);
stem(t,ramp)
xlabel('time')
ylabel('amplitude')
title('ramp function')

subplot(2,3,4);
stem(t,exp)
xlabel('time')
ylabel('amplitude')
title('exponential function')
```

```
subplot(2,3,5);
stem(x,sine)
xlabel('time')
ylabel('amplitude')
title('sine wave')
```

```
subplot(2,3,6);
stem(t,rand)
xlabel('time')
ylabel('amplitude')
title('random function')
```

Output:

