**CODE:**

x=[1 2 3 4];

N=size(x);

pi=3.14;

j=sqrt(-1);

for k=1:4

X(k)=0

sum=0

for n=1:4

X(k)=sum + x(n)\*(exp(-j\*2\*pi\*(k-1)\*(n-1)/4));

sum=X(k);

end

y=round(X(k));

disp(y);

absy=abs(y);

disp(absy);

a=gca();

a.data\_bounds=[0,0;4,10];

title('Discrete Fourier Transform');

xlabel('Discrete Frequency');

ylabel('Absolute value of DFT')

plot2d3(k,absy);

end

**OUTPUT:**

10.

10.

- 2. + 2.i

2.8284271

- 2.

2.

- 2. - 2.i

2.8284271

