**K. J. Somaiya College of Engineering, Mumbai-77**

Semester: ODD 20-21

Sample Question for fourier series

Q1 Draw graph of the function and its fourier series (with n=50,n=10)

Code :

clc

L=%pi

x=0:0.01:2\*L;

f=x^3;

a0=(1/(2\*L)\*inttrap(x,f));

for n=1:50

f1=f.\*cos(%pi\*n\*x\*(1/L));

a(n)=(1/L)\* inttrap(x,f1);

end;

for n=1:50

f2=f.\*sin(%pi\*n\*x\*(1/L));

b(n)=(1/L)\* inttrap(x,f2);

end;

subplot(2,1,1), plot(x,f); //plots the *graph of function*, (2,1,1) implies in

display of output, there are two rows

and 1 column , (2,1,1) implies the graph no

u=0; y=0;h=0;

for n=1:50

u= a(n)\*cos(%pi\*n\*x\*(1/L))+ b(n)\* sin(%pi\*n\*x\*(1/L))+y;

y=u;

fs=y+ a0;

end;

subplot(2,1,2), plot(x,fs); //plots the *graph of fourier series of function*

**OUTPUT**

**For n=50**



**For n=10**

Dear All,

You have to upload the file in the following manner. Name the file as

batch\_roll no\_first name

**Name**

**Batch and Roll no**

**Ques**

**Code**

**graph**