**3.5 MATLAB CODE**

% Monte Carlo approach for evaluation of integrals.

clear all

n = input('Enter value for n: ')

syms x;

% Expected value of integral

Ic = int(sin(x)/(x),0,n\*pi)

% Random number generator

z = input('Enter z for a large sequence: ')

% Limits of integrals

a = (n-1)\*pi;

b = n\*pi;

x =(b-a)\*rand(1,z)+a;

for i=1:z

fx(i)=sin(x(i))/(x(i)); %sin(x)/(x)

end

% Average of sum to get approximate value

Imc =(b-a)\*(sum(fx)/z)

% Error

error = 100\*(Ic-Imc)/Ic

% Confidence Interval

S = std(x)/sqrt(z);

T = tinv([0.025 0.975],z-1);

CT = mean(Imc) + T\*S;

*Estimated vs Expected Value of the integral*

