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Course:B.Sc(H) Physics Sem-5

Roll No.-81

2a)-

Source Code:  
clc

clear

n=input("n=")

m=input("m=")

x=poly(0,"x")

j1=input("Enter the no. of terms for first sinusoidal series=")

j2=input("Enter the no. of terms for first sinusoidal series=")

sinnx=0

sinmx=0

a1= n\*%pi\*x

a2= m\*%pi\*x

for i=0:j1

sinnx= sinnx + (((-1)^(i))/factorial(2\*i + 1))\*a1^(2\*i + 1)

end

for i=0:j2

sinmx= sinmx + (((-1)^(i))/factorial(2\*i + 1))\*a2^(2\*i + 1)

end

s=sinnx \* sinmx

s=pol2str(s)

i=integrate(s,'x',0,1)

disp(i,"inntegral is=")

Output:

n=1

m=1

Enter the no. of terms for first sinusoidal series=7

Enter the no. of terms for first sinusoidal series=7

inntegral is=

0.5

n=1

m=2

Enter the no. of terms for first sinusoidal series=100

Enter the no. of terms for first sinusoidal series=100

inntegral is=

-0.0000016

n=1

m=1

Enter the no. of terms for first sinusoidal series=8

Enter the no. of terms for first sinusoidal series=8

inntegral is=

0.5

2b)-

Source Code:

clc

clear

n=input("n=")

m=input("m=")

function **y**=f(**x**)

**y**=(sin(n\*%pi\***x**)\*sin(m\*%pi\***x**))

endfunction

i=intg(0,1,f)

disp(i)

Output:

n=1

m=1

0.5

n=10e5

m=10e5

0.5

n=2

m=1

9.689D-18