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COURSE: B.Sc(hons.)Physics

ROLL NO.: 81

**SOURCE CODE:**

clc;

clf;

clear;

h=0.1

n= 1/h

u=zeros(n+1,n+1)

u(1,:)=1

u(n+1,:)=1

u(:,1)=1

u(:,n+1)=1

m=zeros(n+1,n+1)

m(1,:)=1

m(n+1,:)=1

m(:,1)=1

m(:,n+1)=1

m(3,3)=4

c=1

while(abs(m(3,3)-u(3,3))>0.0001)

m=u

for i=2:n

for j=2:n

u(i,j)=(0.25)\*[u(i+1,j) + u(i-1,j) + u(i,j+1) + u(i,j-1)]

end

end

disp("ittration="+string(c))

disp(u)

c=c+1

end

y=1:-h:0

x=0:h:1

plot3d(x,y,u)

**OUTPUT:**