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

Roll No.-081

SOURCE CODE:

clc

clear

clf

function dy=f(r, x)

m=940\*10^6; h=1973;D=0.755501;a=1.44;ro=0.131349;

r1=(r-ro)/r;

dy(1)=x(2)

dy(2)=(2\*m/(h\*h))\*((D\*(exp(-2\*a\*r1)-exp(-a\*r1)))+0.15458)\*x(1)

endfunction

r=0.05:0.01:20

u= ode([0.05;1],0.05,r,f);

plot(r,u(1,:))

xlabel('r',"fontsize",4);ylabel('u(r)',"fontsize",4)

title(" Cuve for Schrodinger equation with Morse potential ","fontsize",2)

OUTPUT:

