**B) Projectile Motion**

SOURCE CODE:

clc

clear

clf

for i=1:4

u=input("Enter Initial velocity (m/s): ")

ang1=input("Enterr angle (theta): ")

ang=ang1\*(%pi/180)

T=(2\*u\*sin(ang))/9.8

t=0:0.001:T

function **p**=f(**t**, **x**)

**p**(1)=**x**(2)

**p**(2)=0

endfunction

x=ode([0;u\*cos(ang)],0,t,f)

function **q**=g(**t**, **y**)

**q**(1)=**y**(2)

**q**(2)=-9.8

endfunction

y=ode([0;u\*sin(ang)],0,t,g)

a=gca()

a.x\_location="origin";

a.y\_location="origin";

plot2d(x(1,:),y(1,:),i)

xtitle( 'Projectile', 'X axis', 'Y axis' ) ;

legends(["Angle="+string(ang1)+ " degree"],[i])

end

OUTPUT:

Enter Initial velocity (m/s): 30

Enterr angle (theta): 60

Enter Initial velocity (m/s): 30

Enterr angle (theta): 45

Enter Initial velocity (m/s): 30

Enterr angle (theta): 30

Enter Initial velocity (m/s): 30

Enterr angle (theta): 20

