**AIM:TO PLOT SPECIFIC HEAT OF SOLIDS (DEBYE’S LAW)**

**SOURCE CODE:**

clc

clear

clf

for i=1:3

R=8.314

thD(i)=input("Enter Debye temperature:")

t0=1

tm=500

N=500

t=linspace(t0,tm,N)

function y=f(z)

y=(z^4\*exp(z))/((exp(z)-1)^2);

endfunction

for k=1:N

T2=thD(i)/t(k)

I(k)=intg(0,T2,f)

Cd(k)=9\*R\*I(k)/(T2^3)

end

plot2d(t,Cd,i)

legends(["Temp="+string(thD(i))+"-"],[i])

end

xlabel("T(K)","fontsize",3)

ylabel(" Specific heat","fontsize",3)

title("Debye theory of specific heat","fontsize",5)

**OUTPUT:**

Enter Debye temperature:50

Enter Debye temperature:100

Enter Debye temperature:150

