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**MATRIC NUMBER:17/ENG02/022**

**DEPATMENT: Computer Engineering**

**ENG 381**

4a.)

commandwindow

clc

close all

syms n(t)

D=diff(n)

eqn =(diff(n,t,2))-(diff(n,t))-(12\*n)==144\*t^3+12.5;

Ref1=D(0)==-0.5;

Ref2=n(0)==5;

Conds=[ref1 ref2];

sol=dsolve(tim,conds);

sol1=simplify(sol)

t=[0:0.1:1.5]

sol2=subs(sol1)

plot(t,sol2)

grid on

grid minor

axis tight

OUTPUT



4b.)

commandwindow

clc

syms y(t)x(t)

close all

Tim1=diff(y,t)-2\*x==exp(-2\*t)

Tim2=diff(x,t)+y==exp(-t)

Tim=[tim1,tim2]

conds=[y(0)==0,x(0)==0]

[yeqxeq]=dsolve(tims,conds)

fplot(yeq)

hold on

fplot(xeq)

grid on

grid minor

OUTPUT: TOGETHER



4bii) Separately

commandwindow

clc

clear

syms y(t)x(t)

close all

tim1=diff(y,t)-2\*x==exp(-2\*t)

tim2=diff(x,t)+y==exp(-t)

tim=[tim1,tim2]

conds=[y(0)==0,x(0)==0]

[yeqxeq]=dsolve(tim,conds)

figure(1)

fplot(yeq)

grid on

grid minor

figure(2)

fplot(xeq)

grid on

grid minor



1. Commandwindow

clear

Clc

syms wtka

tim=k\*exp(-a\*t)\*sin(5\*w\*t)\*cos(3\*w\*t)

Ash=laplace(tim)

Ashn=simplify(Ashh)

commandwindow

clear

clc

syms s

Ash=ilaplace((pi/(s^2)+(15\*pi\*s)+(24\*pi^3))

Ashn=simplify(Ash)