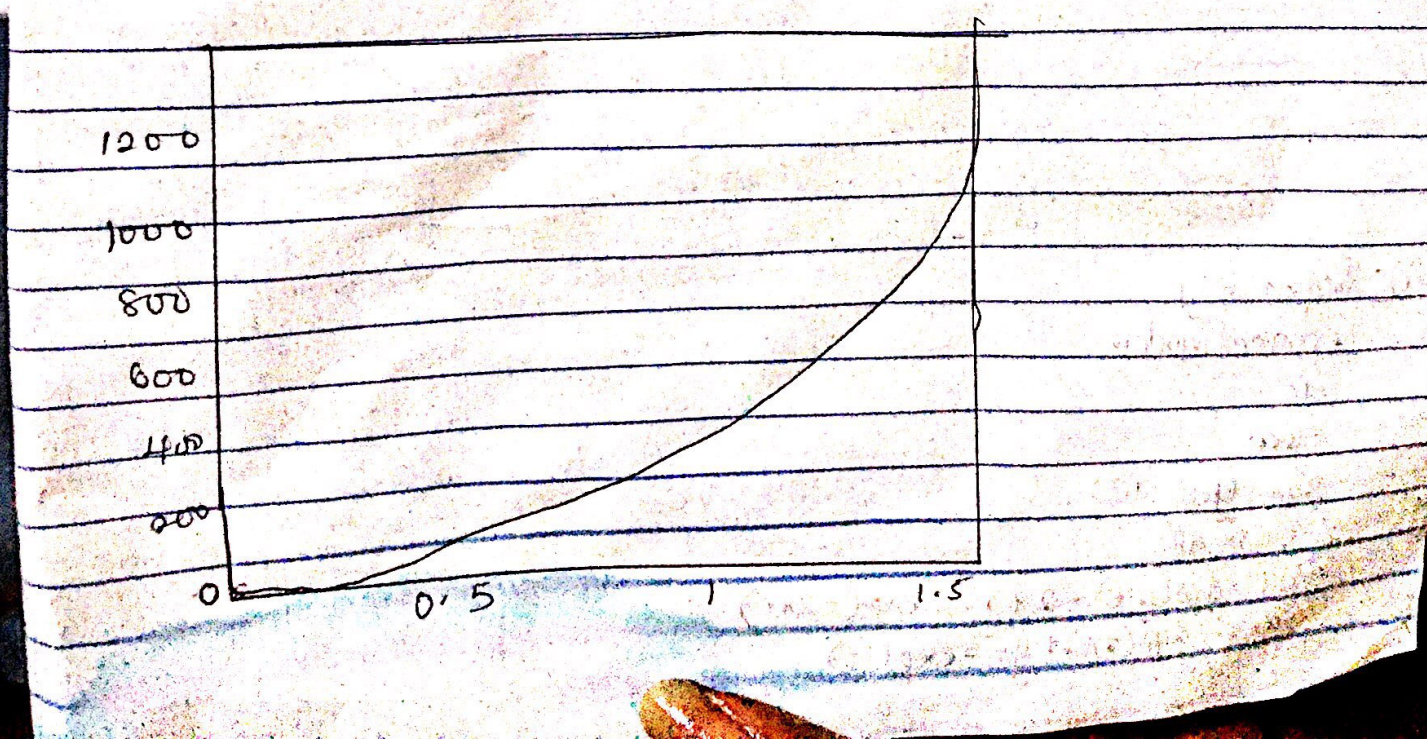
EKPO, DEBORAH JOSEPH
17/ENG02/019
COMPUTER ENGINEERING
ASSIGNMENT

4a) Commandwindow

```
clc
Clear all
Syms n(t)
D = diff(n)
ode = (diff(n,t,2)) - (diff(n,t)) - (12*n) == 144*t^3 + 125;
Cond1 = D(0) == 0.5;
Cond2 = n(0) == 5;
Conds = [Cond1 Cond2];
Sol = dsolve(ode, conds);
Sol1 = Simplify(Sol)
t = [0:0.1:1.5]
Sol2 = Subs(Sol1)
plot (t, Sol2)
grid on
grid minor
axis tight
```

OUTPUT

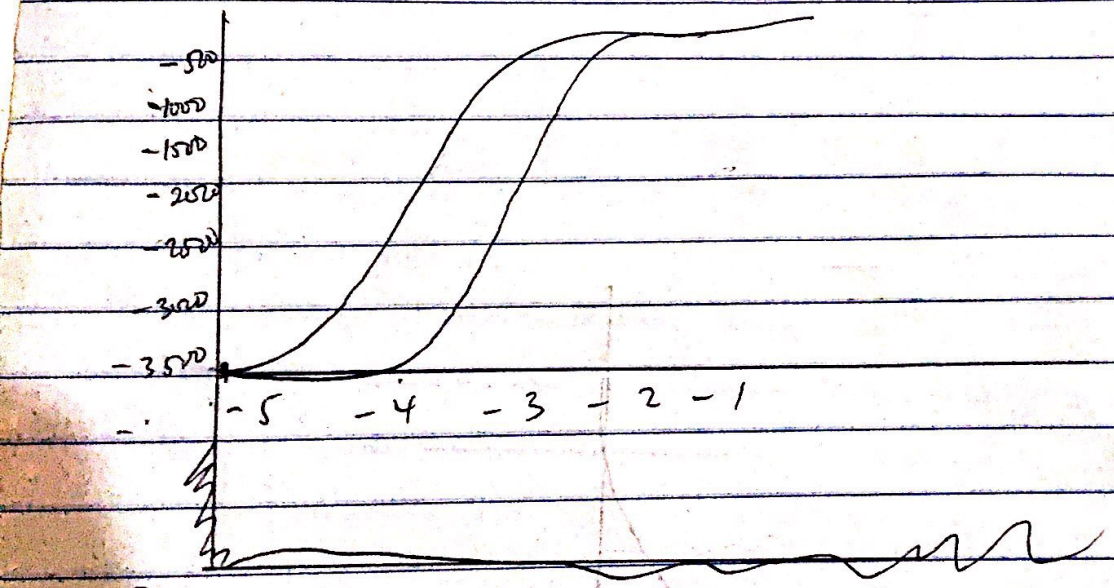


Scanned with CamScanner

46)ii Command window

```
clc
close all
syms y(t) x(t)
ode1 = diff(y,t) - 2*x == exp(-2*t)
ode2 = diff(x,t) + y == exp(-t)
ode = [ode1, ode2]
Conds = [y(0) == 0, x(0) == 0]
[yeq xeq] = dsolve(ode, Conds)
fplot(yeq)
hold on
fplot(xeq)
grid on,
grid minor
```

OUTPUT: TOGETHER



i) Seperately

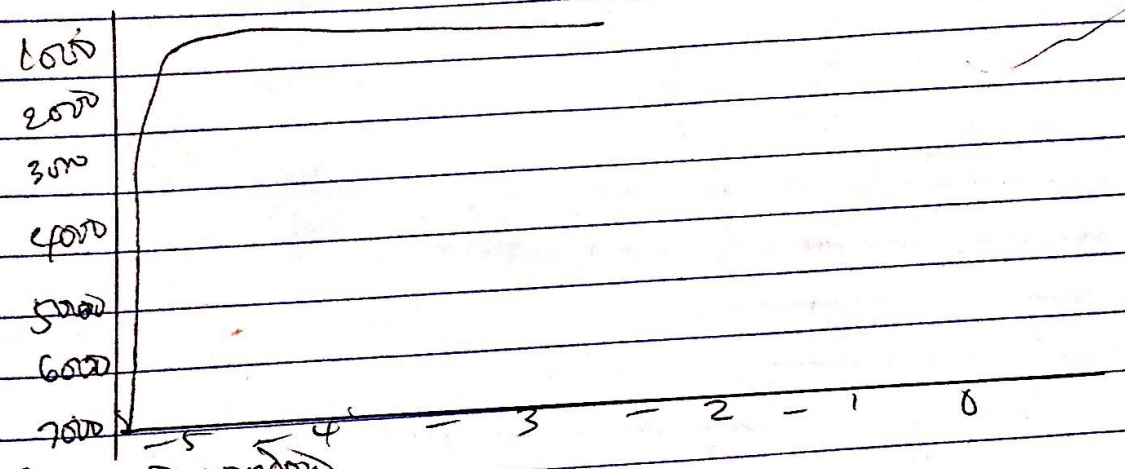
Command window

```
clc
clear
syms y(t) x(t)
Close all
ode1 = diff(y,t) - 2*x == exp(-2*t)
ode2 = diff(x,t) + y == exp(-t)
```

Scanned with CamScanner

```
ode = [ode1, ode2]
conds = [y(0)==0, x(0)==0]
[yeq, xeq] = dsolve(ode, conds)
figure(1)
fplot(yeq)
grid on
grid minor
figure(2)
fplot(xeq)
grid on
grid minor
```

OUTPUT ; SEPARATELY



c) Command window

```
Clear
cle
Syms w t k a
ode = k * exp(-a*t) * sin(5*w*t) * cos(3*w*t)
derby = laplace(ode)
derbyy = simplify(derby)
```

Scanned with CamScanner