Command Window

```
Clc
Clear
Close all

Syms n(t)
eqn = diff(n,t,2) - diff(n,t) - 12*n == 144*(t^3) + 12.5,
Cond = n(0) == 5, diff(n,t,2) == -0.5;
ysol = dsolve(eqn, cond)
t = 0:0.1:1.5
yemi = subs(ysol)
fplot(yemi)
grid on
legend('Yemi', 'location', 'best')
```

(4b)

Command window

```
Clc
Clear
Close window

Syms n(t) y(t)
eqn1 = diff(y,t) - x*x == exp(-1*t);
eqn2 = diff(x,t) + y == exp(-t);
eqn5 = [eqn1 eqn2]

== 0, y(0) == 0;
(eqns, cond)
```

Scanned by CamScanner

OKOH JOSHUA CHUKWUKA
COMPUTER ENGINEERING
17/ENG02/060

xSol(t) = Ans* x
ySol(t) = Ans* y

ii) Visualizing the Solution on graph Seperately continue with
fplot (xSol)
fplot (ySol)
grid on
legend ('xSol', 'location', 'best')
legend ('ySol', 'location', 'best')

iii) Visualizing the Solution on graphs together continue
fplot (xsol)
hold on
fplot (ysol)
grid on
legend (xsol', 'ysol', location, 'best')

4C

Command window
clc
Clear
Closeall
Syms t s w x K a
x = k*exp(-a*t) * sin(3 * w*t) * cos(3wt)
f = laplace (x,t,s)
Simplify (f)
Pretty (ans)

ii) Syms t s
f = Pi * /((s^2) + 15*Pi*5 + 24 * (pi^3))
/laplace (f)
Simplify (ans)
pretty (ans.

Scanned by CamScanner