

OKPOKAM EKOK NZIE  
18/ENG05/045  
MECHATRONICS DEPT

OKPOKAM EKOK  
18/ENG05/045  
MECHATRONICS

$$y = y_0 e^{kt}$$

$$y = 3y_0 ; \frac{y}{y_0} = 3$$

$$* \frac{y}{y_0} = e^{kt} = 3 \quad \text{at } t = 9$$

$$B \frac{y}{y_0} = e^{kt} = 9 \quad \text{at } t = 18$$

$$y_0 = 50 \quad \text{--- i}$$

$$\text{Ans } y_0 = 150 \quad \text{--- ii}$$

$$y = 50 e^{kt}$$

$$y = 150 e^{kt}$$

$$3 = e^{kt}$$

$$\ln 3 = kt$$

$$\ln 3 = 9k$$

$$k = \frac{\ln 3}{9}$$

$$k = 0.122$$

$$9 = e^{kt}$$

$$\ln 9 = 18k$$

$$\frac{\ln 9}{18} = k$$

$$k = 0.122 //$$

$t = 0..15$   
 $A(t) = 50 \cdot e^{(0.122 \cdot t)}$        $B(t) = 150 \cdot e^{(0.122 \cdot t)}$

A(t) =

50
56.488
63.817
72.098
81.453
92.022
103.962
117.451
132.691
149.908
169.359
191.334
216.161
244.209
275.896
311.694

B(t) =

150
169.463
191.452
216.293
244.358
276.065
311.885
352.354
398.073
449.725
508.078
574.003
648.483
732.626
827.687
935.083

