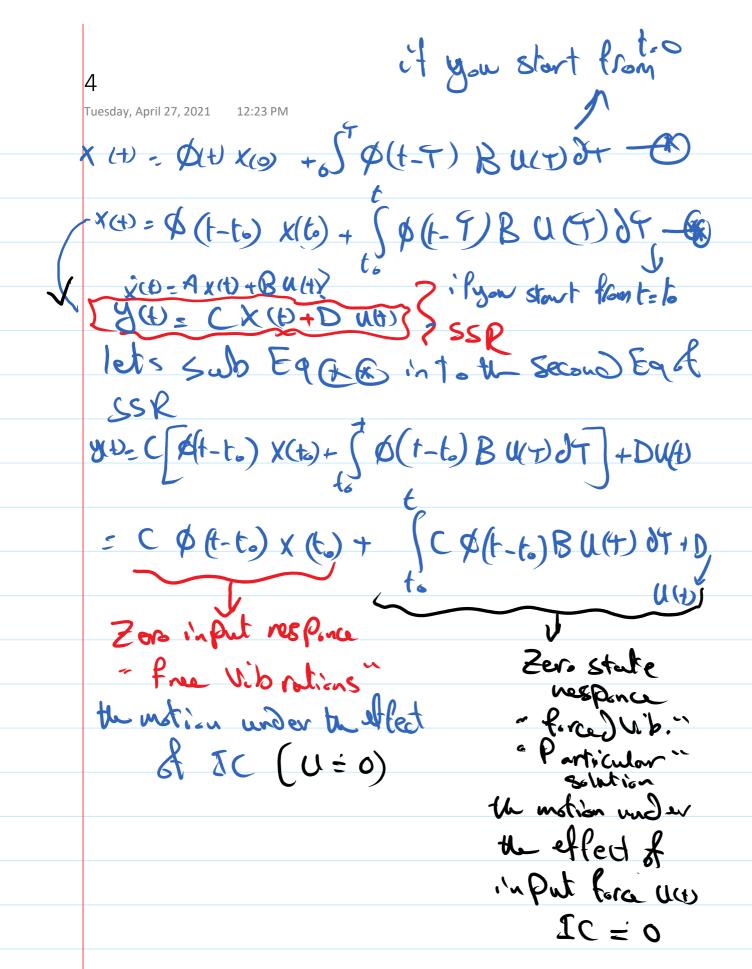


X(+) - Q(+) X(9) + 5 P(+- T) B W(T) FT



$$J^{-1}(SI-A)^{-1} = J^{-1}(SI-A)^{-1} = J^{-$$

Consider the Estem Which is shown below & X(t)= [0] (+) - (0) = [1] find tu responce of the system x(t) if the inflot Free response

Forced 100 Forced 100 Force

To U(T) OT

With OCU: f (SI-A) = e(At) : transition matrix (SI-A): [5 0] - [8 -1] = [5 -1] 0(5):(SI-A)' = 546 1 1 1 -8 5 52+65+8  $\frac{d(t)}{dt} = \int_{-1}^{1} \int_{-2t}^{2t} \frac{1}{5^{2}+65+8}$   $\frac{-2}{5^{2}+65+8} = \frac{5}{5^{2}+65+8}$ Syms t  $\frac{-2}{5^{2}+65+8} = \frac{5}{5^{2}+65+8}$ Flui =  $expm(A \times t)$  " time domain"  $\frac{-2t}{2} - \frac{-4t}{2} = \frac{-4t}{2}$   $\frac{-4t}{2} - \frac{-2t}{2}$  $\phi(t) = \begin{bmatrix} 2e^{2t} - e^{4t} \\ 4e^{4t} & 5e^{2t} \end{bmatrix}$ ze<sup>-4t</sup> - e<sup>2t</sup>

Thursday, April 29, 2021 11: 
$$\frac{1}{2}$$
 April 20, 2021 11:  $\frac{1}{2}$  April

$$x(t) = \phi(t) x(0) + \int \phi(t-T)B u(t) dT$$

$$= \begin{bmatrix} \frac{1}{8} + \frac{7}{4} & \frac{e^{2t}}{3} \\ -\frac{7}{2}e^{-2t} + \frac{7}{8}e^{-4t} \end{bmatrix}$$