$$\frac{d^{2}}{dt^{2}} = y(t) - \frac{1}{dt} = y(t) - 2y(t) = x(t)$$

$$s^{2} = y(s) - s = y(s) - 2 = y(s) = x(s)$$

$$(s^{2} - s - 2) = y(s) = x(s)$$

$$\frac{1}{x(s)} = \frac{1}{s^{2} - s^{2}} = (\frac{1}{s - 2})(s + 1)$$

$$\frac{1}{x(s)} = \frac{1}{s^{2} - s^{2} - 2} = (\frac{1}{s - 2})(s + 1)$$

$$\frac{1}{x(s)} = \frac{1}{s^{2} - 1} = \frac{1}{(s - 2)}(s + 1)$$

$$\frac{1}{x(s)} = \frac{1}{s^{2} - 1} = \frac{1}{(s - 2)}(s + 1)$$

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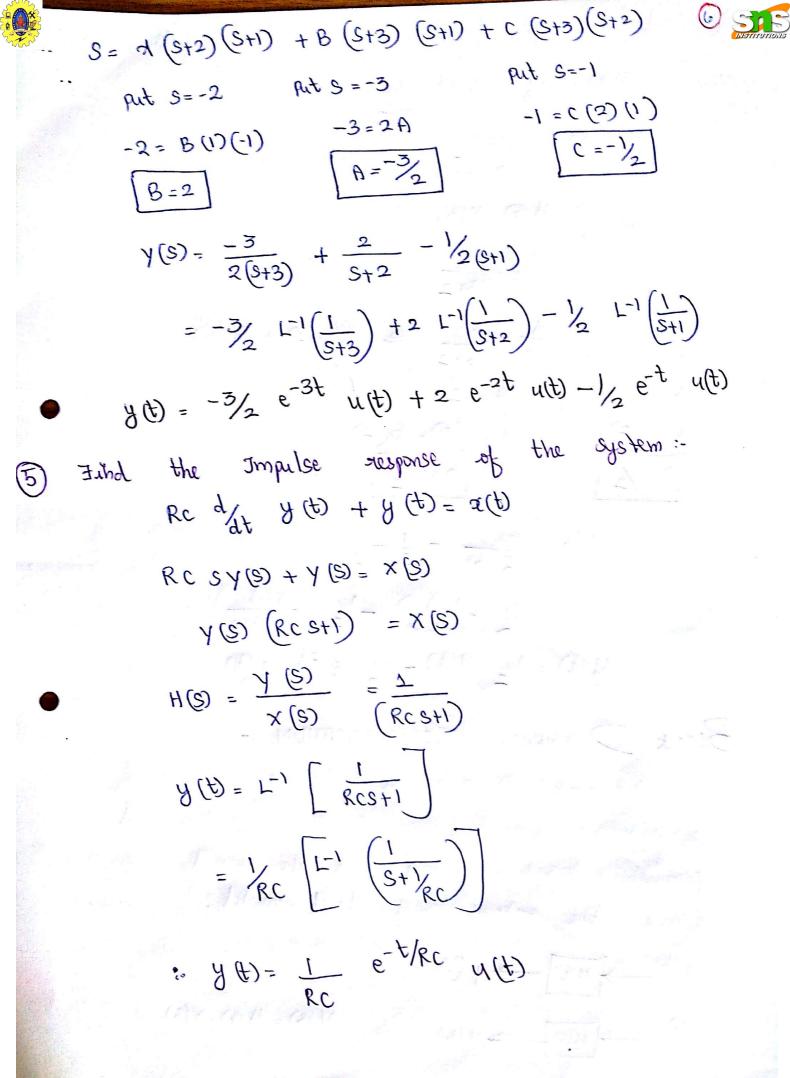
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Find the old of the system :- $h(t) = u(t), x(t) = e^{2t}$ $H(S) = \frac{1}{s} \times (S) = \frac{1}{s+2}$ $H(g) = \frac{\gamma(g)}{\chi(g)}$ Y(S)= H(S) . X(S) $= \frac{1}{8} - \frac{1}{8+2}$ $= \frac{A}{S} + \frac{B}{S+2} \Rightarrow A(S+2) + B(S)$ S = 0 S = -2I = A(0) + B(-2)1 = A(2)B =-1/2 A=1/2 Y (S) = 1 - 1 2 (S) - 2 (S+2) $=\frac{1}{2}L^{-1}\left(\frac{1}{3}\right)-\frac{1}{2}L^{-1}\left(\frac{1}{3+2}\right)$ $y(t) = \frac{1}{2} u(t) - \frac{1}{2} e^{-2t} u(t)$

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