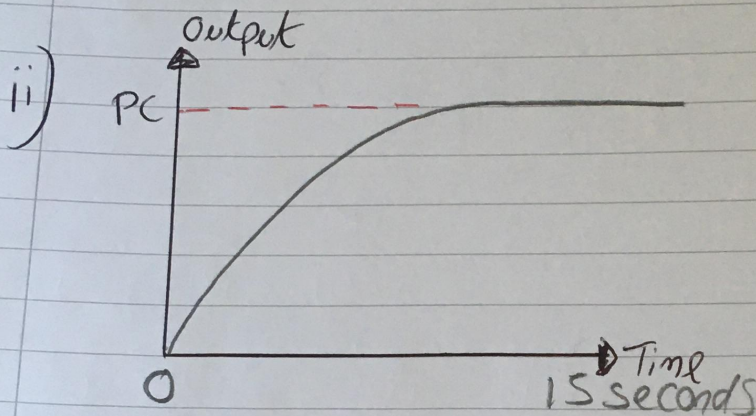


Three

$$b) \quad P_C = P [1 - e^{-t/R_C}]$$

$$i) \quad \phi_0 = \left(\frac{b_0}{a_0}\right) \phi_i [1 - e^{(-\frac{a_0 t}{a_1})}]$$



$$c) \quad y(t) = \tilde{y}(t) + \bar{y}(t)$$

$\tilde{y}(t)$ is transient response

$\bar{y}(t)$ is steady state response

Transient response occurs as a result of a change in the system input and generally dies away after a short interval of time