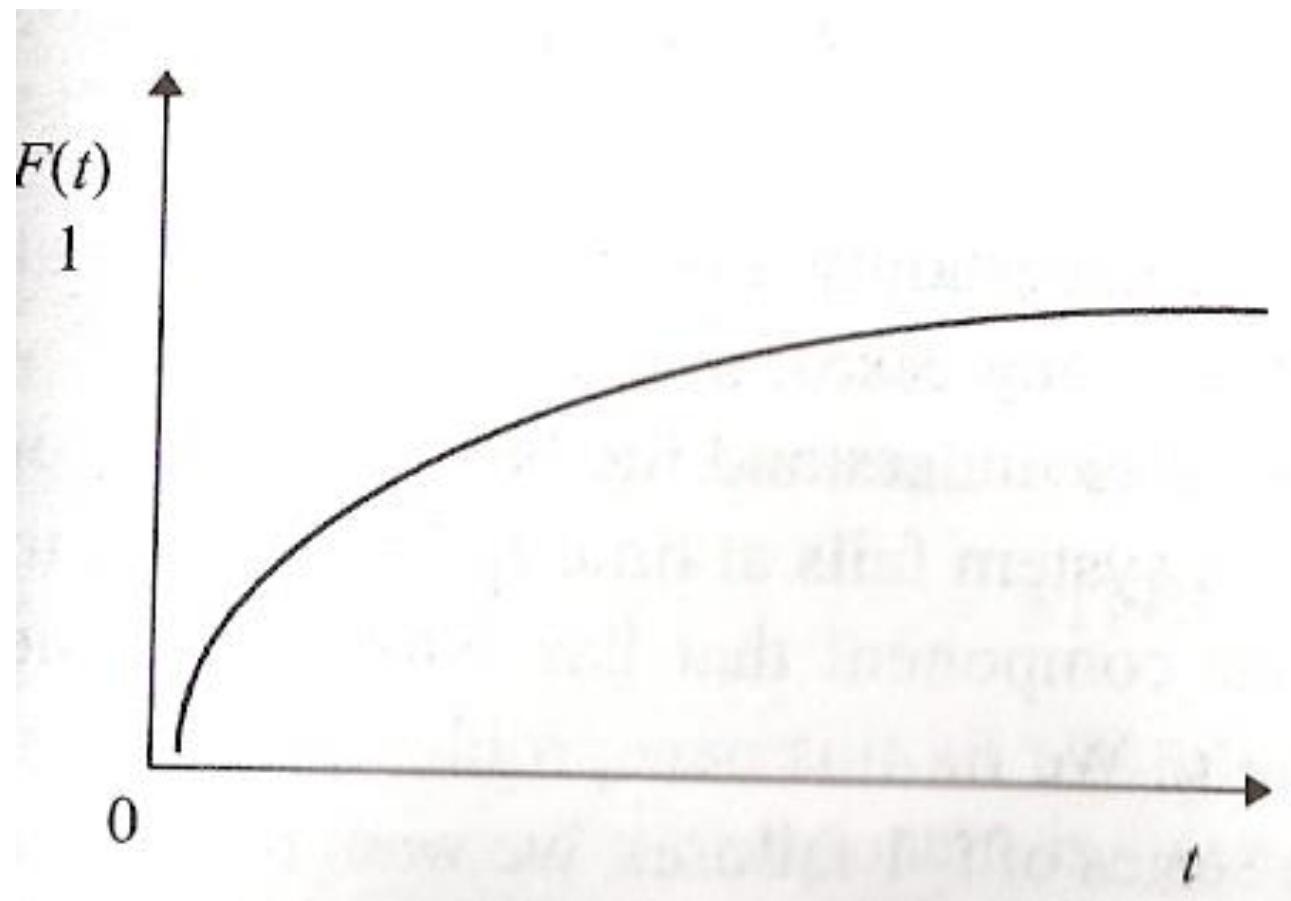


# Cumulative Density Function (CDF)

- **Cumulative density function (CDF):**  
depicting cumulative failures up to a given time  $t$

$$F(t) = \int_0^t f(t) dt$$



- For exponential distribution, CDF is:

$$F(t) = \begin{cases} 1 - e^{-\lambda t} & t \geq 0 \\ 0 & t < 0 \end{cases}$$