

### Glossary:

1. **Life distributions  $F(x)$ :** The probability distribution function of the length of life (lifetime) of a component/ system is the length of the time interval,  $T$ , from the initial activation of the unit until its failure.  $F(t) = P[T \leq t]$ ,  $0 < t < \infty$ .
2. **Density function  $f(x)$ :** For absolutely continuous life distributions, density function is defined and it is the derivative of the life distribution.
3. **Hazard Function  $h(t)$ :** The instantaneous conditional probability of failure in a small interval  $(t, t + dt)$  given that it was not failed until time  $t$ . This is also called as *hazard rate or failure rate function*.
4. **Reliability function  $R(t)$ :** The probability that a device or system will perform its intended function for a given interval of time  $(0, t]$  under specified operating conditions.
5. **Series System:** A system in which components are connected in such a way that the system fails if and only if any one of the components fail.
6. **Parallel System :** A system in which components are connected in such a way that the system fails if and only if all of the components fail.