

## **Self Assessment Questions (SAQs) 1**

- Can you define reliability?
- What is the difference between reliability and quality?
- Can you describe the characteristics of bathtub curve and provide the failure reasons?
- Are you able to give examples of different failure modes?
- Can you comment on whether Moore's law is sustainable? Provide arguments for your comments.
  
- Do you understand the origin of intrinsic and point defects?
- Are there any other types of defects?
- How can the defects be minimised?
- Are defects important in device failure? Elaborate your answer.
  
- Do you know how to obtain the cumulative distribution function (CDF) and the probability distribution function (PDF) from a given set of data?
- Can you calculate the survival probability, the mean time to failure, the standard deviation and the failure rate if the CDF is known?
- Do you know how to calculate failure rates of components using the MIL-HDBK-217F?
- Are there advantages and disadvantages of using MIL-HDBK-217F?
- Do you know how to analyse failure rate using exponential, lognormal and weibull distributions?