

Self Assessment Questions (SAQs) 3

- Describe the Kirkendall effect and discuss how it affects the reliability of an electronic device.
- What is electromigration? Is electromigration an important failure mechanism in IC? If so how can it be minimised?
- Explain the origin of stress voiding and its relevance to reliability of electronic devices.
- What is Electrical Overstress (EOS)? What is Electrostatic Discharge (ESD)?
- Can you explain the potential reliability and failure issues caused by ESD and ways of minimizing ESD?
- Outline how ESD effect can be simulated using equivalent circuit models.
- Describe how hot carriers degrade performance of MOSFETs.
- Describe the three types of corrosions that can occur in electronic devices.
- Give examples of failures in IC due to corrosion.