

Roll No

MEVD - 201

M.E./M.Tech., II Semester

Examination, June 2016

VLSI Technology

Time : Three Hours

Maximum Marks : 70

Note : Attempt any two parts from each question. All questions carry equal marks.

1. a) Explain Slicing process in detail.
b) Explain the importance of polishing process in VLSI.
c) Explain the water fabrication operation in detail.
2. a) Explain the kinetics of oxidation. How junction isolation is done using LOCOS? Give purpose of oxidation.
b) Describe the principles and uses of rapid thermal, high-pressure and anodic oxidation.
c) Prove that the oxidation of the silicon surface results in an oxide layer which is about 2.27 times the thickness of the consumed silicon.
3. a) Describe X-ray lithography and ten step process.
b) Explain the principles of basic photoresist chemistry.
c) Explain the reaction of negative and positive photo resists of light.

4. a) Discuss drive-in-oxidation.
b) What is diffusion? What are the different mechanism by which the random jumps of an impurity in a lattice takes place?
c) What is ion-implantation? Describe any one technique in detail.
5. a) Define CVD in respect of epitaxial growth.
b) What is metallization? Explain briefly and what kind of material is best suited for metallization.
c) Explain the characteristics of deposited films in order to be useful in microcircuit fabrication.
