

Subject: VLSI Design

Minor-II

M.Marks-30
minutes

Time duration: 90

1. (a) What are the four generations of Integrated Circuits? 1
- (b) Highlight all the basic steps for IC fabrication. 2
- (c) Mention the uses of dielectric films in IC fabrication. 2
2. (a) Discuss the use of epitaxial layer in IC fabrication and the problems in growing epitaxial layers. 3
- (b) What is gettering? How is it useful in CZ method? 2
3. (a) Explain the process used for refining silicon crystals in detail. 2
- (b) Elaborate the difference between Gaussian diffusion and constant source diffusion techniques. Also explain the parameters which affect diffusion profile. 5
4. (a) Why wafer must be subjected to annealing process after Implantation? 2
- (b) Explain the process of growing Silicon dioxide layer on the surface of silicon wafer. 3
5. (a) What is Photolithography? Mention the limitation of photolithography. Explain the various steps in photoresist patterning. 4
- (b) Discuss the limitation of use of Aluminium for metallization? 3
- (c) What is the use of polysilicon in IC fabrication. 1