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Fifth Semester B.E Degree Examination**VLSI Fabrication Technology****Module -1**

1. a. What are the fundamental steps involved in IC processing? (10 Marks)
- b. Explain in detail schematic representation of Uniform and selective layers in silicon? (10 Marks)

OR

2. a. Describe Miniaturization in VLSI Circuits. (10 Marks)
- b. Explain in detail PMOS IC Technology Fabrication Process? (10 Marks)

Module -2

3. a. Describe crystal growth and different types of defects? (10 Marks)
- b. With diagram explain Czochralski (CZ) technique. (10 Marks)

OR

4. a. Explain characteristics and Evaluation of crystals. (10 Marks)
- b. Briefly discuss etching and polishing process. (10 Marks)

Module - 3

5. a. Discuss in detail buried layers and Epitaxial defects (10 Marks)
- b. Explain Microscopic growth process and advanced CVD process. (10 Marks)

OR

6. a. Derive the mathematical analysis for growth mechanism and kinetics in oxidation process. (10 Marks)
- b. Explain in details growth techniques, Kinetics and thin oxide properties. (10 Marks)

Module - 4

7. a. Discuss the differences between photolithography and other lithography techniques. (10 Marks)
- b. What are the advantages of electron lithography over optical lithography? (10 Marks)

OR

8. a. Derive the mathematical analysis for growth mechanism and kinetics in oxidation process. (10 Marks)
- b. Explain in details growth techniques, Kinetics and thin oxide properties. (10 Marks)

Module - 5

9. a. What are the properties of silicon dioxide that make it suitable as a dielectric material? (10 Marks)
- b. Briefly explain metallization problems for integrated circuits. (10 Marks)

OR

10. a. Discuss the advantages and limitations of plasma-enhanced deposition techniques. (10 Marks)
- b. With neat diagram explain process steps for self-aligned gate, source and drain-silicide formation. (10 Marks)