

Roll No.

Total Pages : 02

BT-5/D-24

45255

VLSI TECHNOLOGY

ECP-5A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Discuss in detail fabrication steps of VLSI chip fabrication. Discuss the concept of monolithic and hybrid IC's. **10+5**
2. Discuss the process of oxidation in IC fabrication. Discuss high pressure and plasma oxidation in detail. **5+10**

Unit II

3. Discuss the process of epitaxy in detail. Discuss in detail the process of low temperature epitaxy. **7+8**
4. Discuss and differentiate between diffusion and ion implantation. Discuss the process of annealing. **10+5**

Unit III

5. Discuss the concept and need of lithography. Discuss optical, X-ray and ion-beam methods of lithography in detail. **5+10**
6. Discuss the process and types of etching in detail. Discuss various types of photoresist in detail. **10+5**

Unit IV

7. Discuss CMOS fabrication process of IC fabrication in detail. **15**
8. Write short notes on the following : **3×5=15**
- (a) Metallization
 - (b) Packaging of IC
 - (c) VLSI assembly technologies.