C 31620

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
MAY/JUNE 2007
EC 2K 803—MICROELECTRONIC TECHNOLOGY

Time : Three Hours   Maximum : 100 Marks

Answer all questions of I
Each question carries 5 marks.

I. 1 What is drive in diffusion ? How is its analytic solutions found ?

2 What is molecular beam epitaxy (MBE) ?

3 What is the feature of Silicon on Insulator isolation technique ? Explain.

4 What is the difference between junction and oxide isolation ? Where each one is used ?

5 Compare bipolar technology with CMOS technology.

6 Describe the n tub and p tub implant of a twin tub CMOS structure.

7 How is cell hierarchy helpful in lay out of VLSI circuits ?

8 How is lay out of junction isolated BJT done ?

(8 × 5 = 40 marks)

Answer all questions of II to V.
Each question carries 15 marks.

II. 1 Draw the schematic view of channeling. How is channeling characterized ? Define that parameter which characterize channel.

(15 marks)

Or

2 What is the difference between proximity printing and projection printing ? Compare their features.

(15 marks)

III. 1 What is meant by SILO process ? Describe.

(15 marks)

Or

2 When and where implanted ohmic contact is used ? How is this done ?

(15 marks)

IV. 1 Describe the fabrication process sequence of NMOS IC technology.

(15 marks)

Or

2 Compare the effects of hot carriers in CMOS and bipolar processes.

(15 marks)

V. 1 Describe the lay out rules for metal layers. poly 1 and 2.

(15 marks)

Or

2 Explain CMOS inverter gate lay out with sketches.

(15 marks)

(4 × 15 = 60 marks)