

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2009**

EC 04 801 – MICROELECTRONIC TECHNOLOGY

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

- I. (a) Briefly explain about the diffusion.  
(b) Briefly explain about the optical lithography.  
(c) Briefly explain about the Swami Process.  
(d) Briefly explain about the implanted ohmic contacts.  
(e) Explain about the CMOS Process.  
(f) Briefly explain about the early bipolar process.  
(g) Briefly explain about the VLSI design fundamentals.  
(h) Briefly explain about the design rule for Poly 1.
- (8 × 5 = 40 marks)
- II. (a) What is meant by grove model? Explain in detail about the Contrast curve. (15 marks)
- Or*
- (b) Write short notes on :  
(i) MOCVD. (7 marks)  
(ii) Molecular beam epitaxy. (8 marks)
- III. (a) (i) Explain in detail about SILO. (7 marks)  
(ii) Explain in detail about the implanted ohmic contacts. (8 marks)
- Or*
- (b) (i) Explain in detail about the alloyed contacts . (7 marks)  
(ii) Explain in detail about Oxide Isolation. (8 marks)
- IV. (a) Discuss in detail about the not carrier effects in BJT and CMOS. (15 marks)
- Or*
- (b) Explain in detail about the advanced bipolar process. (15 marks)

**Turn over**

V. (a) Write short notes on :

(i) Layout using Cell hierarchy.

(7 marks)

(ii) Layout design rule for well.

(8 marks)

*Or*

(b) Explain in detail about the layout using Cell hierarchy.

(15 marks)

[4 × 15 = 60 marks]