



M 22233

Reg. No. :

Name :

**VII Semester B.Tech. Degree (Reg./Supple./Improv. – Including Part Time)
Examination, November 2012
(2007 Admn. Onwards)**

PT2K6/2K6 EC 701 : MICROELECTRONICS TECHNOLOGY

Time : 3 Hours

Max.Marks : 100

PART – A

- | | |
|--|---|
| I. a) Explain dry etching. Give one example. | 5 |
| b) Briefly explain about Schottky contacts. | 5 |
| c) What is MTF ? What is its importance ? | 5 |
| d) What is sub threshold conduction and DIBL effect ? | 5 |
| e) Draw the VTC of Bi CMOS inverter and explain. | 5 |
| f) Briefly describe λ base design rules for metals and pads. | 5 |
| g) Discuss the isolation process for bipolar IC process. | 5 |
| h) Briefly describe scattering in nano transistors. | 5 |

PART – B

- | | |
|--|----|
| II. a) Derive the analytical model for oxidation. | 15 |
| OR | |
| b) With a neat diagram, explain CVD process for Si. | 15 |
| III. a) Compare early bipolar and advanced bipolar process with suitable diagrams. | 15 |
| OR | |
| b) i) What are hot carrier ? | 5 |
| ii) How hot carries affect the performance of BJT and MOS ? | 10 |

P.T.O.



IV. a) i) Realize the logic function $Y = A \oplus B$ using CMOS logic family and draw its stick diagram. **10**

ii) Draw the stick diagram of CMOS inverter. **5**

OR

b) Realize a 4 bit full added using CMOS. Draw its stick diagram. **15**

V. a) Write short notes on.

i) LOCOS **7**

ii) SWAMI **8**

OR

b) Write short notes on

i) Junction Isolation and Trench Isolation. **10**

ii) Ballistic nano transistors. **5**
