



M 26075

Reg. No. :

Name :

VIII Semester B.Tech. Degree (Supplementary including Part Time)
Examination, October 2014
(2006 and Earlier Admn.)

PTEC/EC 2K 803 : MICROELECTRONICS TECHNOLOGY

Time : 3 Hours

Max. Marks : 100

PART – A

1. Briefly explain proximity printing and projection printing techniques.
2. Explain vertical and lateral projected ranges in ion implantation.
3. What are the different uses of oxidation ?
4. Explain different metal-semiconductor contacts.
5. Explain hot carrier effects in CMOS.
6. Explain the necessity of twin tub process in CMOS fabrication.
7. Explain briefly λ based design rules.
8. Draw the layout of CMOS inverter. (8×5=40)

PART – B

9. i) Explain and derive Fick's law of diffusion. 7
ii) Derive the solution of Fick's law for drive in diffusion. 8
- OR
10. i) What is epitaxy ? What are the different types of epitaxy. 5
ii) With a neat diagram explain molecular beam epitaxy. 10

P.T.O.



11. Explain with neat diagram junction isolation and oxide isolation. 15

OR

12. i) Explain multilevel metallization. 5

ii) Explain junction spiking and electron migration. 10

13. With neat diagrams, explain early bipolar process. 15

OR

14. With neat diagrams, explain nMOS fabrication process. 15

15. i) Draw the labelled crosssection and layout of the following :

a) nMOS. 5

b) pnp BJT. 5

ii) Draw the schematic and layout of pseudonMOS inverter. 5

OR

16. Draw the schematic, stick diagram and layout of the following :

i) 2 input NAND gate.

ii) 2 input NOR gate. 15

PART-B

9. i) Explain and derive Fick's law of diffusion.

ii) Derive the solution of Fick's law for drive in diffusion.

OR

10. i) What is epitaxy? What are the different types of epitaxy.

ii) With a neat diagram explain molecular beam epitaxy.