

1129

M. Tech. (Micro-Electronics)
First Semester
MIC-102: Integrated Circuit Technology

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Attempt the following:-
- a) Point defects
 - b) Diffusion
 - c) Direct compounding
 - d) Name water cleaning technique
 - e) Oxidation
 - f) Etching.
 - g) Name one MOS device fabrication.
 - h) Name Sputtering technique
 - i) One problem in CMOS process
 - j) Surface Concentration (10x1)

UNIT - I

- II. Explain the wafer preparation processes for MOS technologies. (10)
- III. Differentiate between p-channel and n-channel. What is ion- Implantation? (10)
- IV. Explain oxidation diffusion and metallization process in detail. (10)

UNIT - II

- V. Explain Bipolar and MOS device fabrication techniques. (10)
- VI. Write the differences between p MOS and n MOS with CMOS Technologies. (10)
- VII. Explain the following:-
- a) Dry and Wet Etching
 - b) Nonlinear Regression
 - c) Twin well CMOS Process (10)

x-x-x