



**B.Tech. Degree V Semester (Supplementary) Examination in
Electronics and communication Engineering
June 2002**

**EC 503 MICRO ELECTRONICS AND
INTEGRATED CIRCUITS
(1998 Admissions)**

Time: 3 Hours

Maximum Marks: 100

MODULE - I

- I. (a) Explain Ion implantation process with the help of a diagram. (12)
 (b) What are the advantages of ion implantation and how it is utilized in VLSI technology. (8)
- OR**
- II. (a) Discuss the advantages of ICs over discrete devices. (6)
 (b) List the steps involved in the fabrication of a monolithic IC. (10)
 (c) Compare thin film and thick film technology. (4)

MODULE - II

- III. (a) With the help of neat sketches explain the fabrication steps for a PMOS transistor. (12)
 (b) How isolation is achieved between transistors in MOS technology? (8)
- OR**
- IV. (a) Explain p-well process of CMOS fabrication with the help of neat sketches. (14)
 (b) Mention the advantages of CMOS technology. (6)

MODULE - III

- V. (a) What are the importance of constant voltage sources and constant current sources in IC fabrication? (8)
 (b) Explain the working of a current source and discuss its fabrication. (12)
- OR**
- VI. (a) Write short notes on precision current source. (8)
 (b) Draw the circuit of a level translator. Mention the application of dc level translators. (12)

MODULE - IV

- VII. (a) Explain the processing steps involved in the fabrication of capacitors and resistors in thick film technology. (12)
 (b) Explain the structure and operation of a phase modulator. (8)
- OR**
- VIII. (a) Discuss the structure and characteristics of coupled waveguide. (8)
 (b) Distinguish between thin film and thick film devices. (6)
 (c) Explain the working of an optical switch. (6)

MODULE - V

- IX. (a) Describe the basic operation of a CCD with the help of diagrams. (8)
 (b) Explain how one bit can be read/written in an SRAM cell. (12)
- OR**
- X. (a) Give a comparison between conventional ICs and ASICs. (8)
 (b) Write short notes on FPLA. (5)
 (c) Explain the operation of I²L inverter. (7)