Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐ **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(EE/Electrical & Electronics) (2011 Onwards E-I)
(Sem.–6)

MICROELECTRONICS TECHNOLOGY

Subject Code : BTEE-605F
Paper ID : [A2344]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Q.1 Answer briefly :

a. How electrical noise is effective in integrated circuit?

b. Define monolithic IC's.

c. Write down the various advantages of thick film hybrid circuits.

d. Write down the design guidelines for Thin film processing.

e. Write down the various scale of integration in IC's.

f. What is drift current?

g. What is carrier lifetime?

h. What do you mean by wire bonding in IC technology?

i. What is the effect of impurities on the oxidation rate?

j. What is lambda rule?

SECTION-B

Q.2 Discuss the various scales of integration and recent development in IC technology.

Q.3 How can we purify the Si ingot from insoluble impurities with the help of Zone refining?

Q.4 Explain different types of projection techniques used in Photolithography.

Q.5 What do you mean by Diffusion? Write down the Fick's first and second law.

Q.6 What do you mean by Scaling? Write down its limitations in MOS circuits.

SECTION-C

Q.7 What is the effect of impurities and irregular surface of wafer on the oxidation rate? Explain.

Q.8 Discuss the major steps involved in Bipolar IC fabrication process.

Q.9 Describe the body effect on CMOS transistors. Why masking is done in fabrication of NMOS transistor?