Printed Pages: 01 **Sub Code: EEC034**

Paper Id: 131212 **Roll No.** | | | | | | | | | | |

B.Tech

(SEM VIII) THEORY EXAMINATION 2018-19

Integrated Circuit Technology

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a) Explain the term metallization.
b) What is etching?
c) Describe the process of diffusion.
d) Write a short note on diffusion furnace
e) Write the application of poly silicon
f) Explain the range theory of ion implantation.
g) Explain the bipolar IC technology.
h) What is lithography?
i) Explain silicon shaping.
j) Write the application of metallization.

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30

a) Distinguish between NMOS IC technology and CMOS IC technology.
b) What is optical lithography ? Explain in detail.
c) Derive the diffusion equation.
d) Write a short note on VLSI assembly technology
e) What do you understand by phase epitaxy. Explain the molecular beam epitaxy.

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

a) Explain the following terms: LSI , MSI, VLSI
b) Write a short note on epitaxial evaluation.

4. Attempt any *one* part of the following: 10 x 1 = 10

a) How many steps are used for VLSI packaging design?
b) Write a short note on sputtering appratus

5. Attempt any *one* part of the following: 10 x 1 = 10

a) What is ion implantation? How many types of techniques are used for ion implantation?
b) Describe the diffusion impurities in silicon dioxide.

6. Attempt any *one* part of the following: 10 x 1 = 10

a) Distinguish between dielectric and poly silicon film deposition.
b) Explain the wet chemical etching with suitable diagram.

7. Attempt any *one* part of the following: 10 x 1 = 10

a) Distinguish between monolithic and hybrid integrated circuits.
b) Write a short note on IC fabrication.