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Roll No. | | | | | | | | | | |

Odd Semester Examination 2019-20
B.TECH (V SEM)
VLSI TECHNOLOGY-TEC-503

Time : 3:00 hr Max. Marks : 100

Note: Attempt all questions. All question carry equal marks.

Q1- Attempt any four of the following: **(5x4=20)**

(a) What are the advantages of Integrated Circuit over discrete components?

(b) Explain the Fick's Theory of diffusion.

(c) Discuss CZ technique of crystal growth.

(d) Discuss the Oxidation process. What is the need of Oxide layer?

(e) Define the Oxide model for Oxidation process.

Q2- Attempt any four of the following: **(5x4=20)**

(a) What is Epitaxy? Discuss the types of epitaxy method briefly.

(b) Explain the difference between Positive and Negative photoresist.

(c) What is channeling? How does it affect the implantation?

(d) Describe MBE process. Also write its advantages and disadvantages.

(e) What is diffusion? Explain different type of diffusion system.

Q3- Attempt any two of the following: **(10x2=20)**

(a) What is Optical lithography? Explain the printing techniques used in optical lithography.

(b) Explain the difference between Electron Beam Lithography, Ion beam lithography and X ray lithography. Also define the type of resist used in it.

(c) Define different types of Etching process. Define the term Uniformity, Anisotropy, Throughput and Selectivity.

Q4- Attempt any two of the following: **(10x2=20)**

(a) Explain the fabrication steps involved in CMOS IC using p well technology.

(b) What is metallization and what are the problems associated with it ?

(c) Explain PVD process. Also explain different types of system used in it.

Q5- Attempt any two of the following: **(10x2=20)**

(a) What is Packaging? Explain its types.

(b) What are the parameters considered at the time of packaging?

(c) Write short note on:-

(i) Yield loss in VLSI (ii) Yield loss modeling (iii) Accelerated Testing.