



PRESIDENCY UNIVERSITY

BENGALURU

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Mid - Term Examinations - March 2026

Date: 12- 03- 2026

Time: 09:30am - 11.00am

School: SOE	Program: BTECH-VLSI		
Course Code: ECE2510	Course Name: Introduction to Fabrication Technology		
Semester: IV	Max Marks: 50	Weightage: 25 %	

CO - Levels	C01	C02	C03	C04	C05
Marks	26	14	10		

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

5Q x 2M=10M

1	Define semiconductor fabrication.	2 Marks	L1	C01
2	What is electronic-grade silicon (EGS)?	2 Marks	L1	C01
3	State the purpose of oxidation in IC fabrication.	2 Marks	L1	C01
4	Define oxidation in VLSI fabrication.	2 Marks	L1	C02
5	State any two purposes of silicon oxidation.	2 Marks	L1	C02

Part B

Answer the Questions.

Total Marks 40M

6.	Semiconductor fabrication involves a sequence of carefully controlled processing steps. With reference to this statement, describe the complete sequence of basic steps involved in semiconductor fabrication, starting from wafer preparation to device completion.	10 Marks	L1	C01
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Or

7.	The purity of silicon plays a critical role in IC fabrication. With reference to electronic-grade silicon (EGS), describe its properties and preparation procedure.	10 Marks	L1	CO1
8.	Oxidation is one of the most fundamental processes in VLSI fabrication. With reference to thermal oxidation of silicon, explain the oxidation mechanism and classify the different types of thermal oxidation. Explain how process parameters affect oxide growth.	10 Marks	L2	CO2
Or				
9.	Accurate prediction of oxide thickness is essential for process control. With reference to the Deal–Grove oxidation model, explain the physical basis of oxide growth. Explain the linear and parabolic growth region.	10 Marks	L2	CO2
10.	Single-crystal silicon wafers are the foundation of IC fabrication. With reference to the Czochralski crystal growth method, describe the growth procedure in detail.	10 Marks	L1	CO1
Or				
11.	Contamination control is critical in semiconductor fabrication environments. With reference to clean room technology, describe the need for clean rooms in IC fabrication. Describe different classes of clean rooms and contamination sources.	10 Marks	L1	CO1
12.	Material removal processes play a major role in pattern transfer. With reference to etching techniques, explain different etching processes used in VLSI fabrication. Explain the working principles of etching	10 Marks	L2	CO3
Or				
13.	As feature sizes continue to scale down, advanced lithography techniques become essential. With reference to Electron Beam Lithography (EBL), describe its working principle and process flow. Explain its working.	10 Marks	L2	CO3