Time: 3 Hours Max Marks: 80

N.B. 1) Question No.1 is compulsory
2) Solve any three questions from the remaining questions.
3) Assume suitable data if necessary.

1		Solve **any four** of the following	
	(a)	Enlist the steps for obtaining silicon from sand	5
	(b)	Compare evaporation and sputtering methods for metal deposition	5
	(c)	Explain bird beak effect.	5
	(d)	Enlist important Parameters for which measurement is required before device processing begin	5
	(e)	Explain SOI fabrication using bonded SOI and smart cut.	5
2	(a)	Explain Liquid phase epitaxy method with neat diagram	10
	(b)	What do you mean by Class of clean room ? Give the steps in standard RCA cycle during wafer cleaning	10
3	(a)	Explain the fabrication process steps along with vertical cross sectional view of CMOS inverter using N well along with vertical cross sectional view.	10
	(b)	Explain the difference Between Positive Photo resist and Negative Photo resist.	5
	(c)	Differentiate Between Schottky contacts and Ohmic contacts	5
4	(a)	State need of λ (lambda) based design rules and draw layout of CMOS based 2 input NAND gate.	10
	(b)	Describe with the help of a neat diagram Haynes –Shockley Experiment for measurement of drift mobility of n-type semiconductor	10
5	(a)	Explain difference between SOI Finfet and Bulk Finfet	5
	(b)	Explain MMIC technology.	5
	(c)	Explain the difference Between Contact, Proximity and Projection Printing	10
6		Write short note on **any four**	
	(a)	Types of Thin Film deposition Technique	5
	(b)	MESFET fabrication	5
	(c)	Application of nanowire	5
	(d)	Electronic package reliability.	5
	(e)	Dry and Wet Etching	5

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