BE, Sem.-VII, Electronics, FH2018 11/05/18

I.C.T. (IC Technology)

Q.P.Code: 37947

(3 Hours) [Total Marks: 80]

Note: (1) Question No.1 is compulsory.
(2) Attempt any three out of remaining.
(3) Assume suitable data wherever required.

Q.1.	Solve any four of the following	
(a)	Enlist the steps for obtaining Silicon from Sand	5
(b)	Explain the difference between Dry oxidation and Wet Oxidation	5
(c)	Enlist important parameters for which measurement is required before device processing begin.	5
(d)	Explain difference between FD SOI and PD SOI	5
(e)	Compare evaporation and sputtering methods for metal deposition	5
Q.2 (a)	With a neat diagram, explain the Float Zone technique of crystal growth	10
Q.2(b)	What do you mean by Class of clean room? Give the steps in standard RCA cycle during wafer cleaning	10
Q3.(a)	Explain the difference Between Contact, Proximity and Projection Printing	10
Q3 (b)	Develop the equations to describe the oxidation process (Deal-Grove Model)..	10
Q.4(a)	Explain need of isolation in VLSI .Explain one method to accomplish it	10
Q.4(b)	Draw Layout of CMOS Inverter along with its circuit diagram. Mention Clearly all dimensions as per lambda rules. Explain buried and butting contact.	10
Q.5(a)	Describe with the help of a neat diagram Hayness-Schokly experiment for measurement of Drift Mobility of n-type semiconductor	10
Q.5(b)	Explain the fabrication Process steps along with vertical cross-sectional view for CMOS Inverter using N-well Process	10
Q.6	Write short notes on any four of the following. (a) Fabrication of MESFET (b) Silicon Crystal defects (c) Electronics package reliability (d) Multigate device structures (e) Types of Thin Film Deposition	20