EE 784, IC Technology

1st Semester 2007

Major

Date: 09.05.2007 **Venue: II LT 1** **Time: 10.30 am-12.30pm**
Marks: 40 **5 Marks for each question**

1. Silicon is wet oxidized at 900 °C for 40 min produces 1000 Å of oxide and then it is subjected to a dry oxidation for 700 min at 1000 °C. How the total thickness of oxide is calculated?

2. Comments on Deal and Grove's model of silicon oxidation.

3. What are the purposes of silicon oxide film over silicon while implantation?

4. If boron is implanted into 5 X 10^{15} cm^{-3} n-type silicon at 100 keV and if its peak concentration is 5.7 X 10^{17} cm^{-3}, projected range is 0.30 μm and standard deviation is 0.07μm, calculate junction depth after implant.

5. Explain the effect of electric field and high doping diffusion in BJT through figure.

6. Name the basic meaningful parameters of dopant defused layer in view of device performance and how these parameters are measured (in very short).

7. How polysilicon is deposited?

8. Explain the reactive mode RF sputtering system and also explain a film deposition by this technique.