EECS 143 Microfabrication Technology

Department of Electrical Engineering and Computer Sciences
University of California, Berkeley

Week #7 Quiz--Source/Drain

Name ________________________________ Section ______ Date ___________

(1) What is the purpose of the spin-on glass (SOG)?

(2) Why is the timing of the pre-diffusion step important?

(3) What is the dopant atom we are depositing in the source/drain regions?

(4) Why do we use a wet oxidation for the intermediate oxide?

(5) What is the purpose of the N_2 anneal?

(6) If the polysilicon was only 100nm thick instead of 350nm what problems might this create?

(7) What are the advantages of using ion implantation instead of spin-on-glass to dope the source and drain? What are some of the disadvantages?

(8) After the deposition, when we use the four-point probe, are we measuring sheet resistance or bulk resistivity?

(9) Draw a cross-sectional view of what the diffused source and drain regions will look like after this week's lab for a simple transistor (MOSFET), including all other layers and the effects of isotropic etching. Is this a self-aligned process? Explain. (2 points)