

COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering

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Course Title: VLSI Fabrication & Testing

Course No.: EC536 Diffusion Problem Set

Date: Oct. 10, 2012



Question 1 :

1a- Find the diffusivity of As in Si at 1000C using Table 3.2

1b- Find the diffusion length for 1a after 1 hour

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Question 2:

An n-type silicon wafer has an initial concentration of $1E16cm^{-3}$.

Boron surface concentration of $1E15cm^{-2}$ is deposited at $t=0$. After $t=0$, no more dopants were added.

Find the the junction depth under the following conditions:

$T = 1000C$, $t = 10min$, $D_0 = 0.037cm^2/sec$, $E_a=3.46 eV$.

$K_B=8.617E-5 eV/K$

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