Started on	Monday, 2 September 2024, 1:42 PM
State	Finished
Completed on	Monday, 2 September 2024, 1:42 PM
Time taken	30 secs
Marks	8.00/8.00
Grade	10.00 out of 10.00 (100%)
Question 1 Correct Mark 2.00 out of 2.00	The threshold voltage of a MOSFET increases with increase in the concentration of dopants in the channel of the MOSFET. A n-channel MOSFET channel is p-type doped, and a p-channel MOSFET channel is n-type doped. In a MOSFET fabrication process, the channel regions are first doped, and subsequently a silicon dioxide is film is grown by thermal oxidation. Match the statements below.
	actual threshold voltage of the n-channel MOSFET  The actual threshold will be higher than the threshold voltage estimated using the dopant profile obtained after the doping process will be higher than the threshold voltage estimated using the dopant profile obtained after the doping process will be higher than the threshold voltage estimated using the dopant profile obtained after the doping process.
	of the p- channel MOSFET
	Your answer is correct.  The correct answer is: The actual threshold voltage of the n-channel MOSFET → will be lower than the threshold voltage estimated using the dopant profile obtained after the doping process., The actual threshold voltage of the p-channel MOSFET → will be higher than the threshold voltage estimated using the dopant profile obtained after the doping process.
Question 2 Correct Mark 2.00 out of 2.00	Which of the following is (are) true for the diffusion of dopants in silicon?  ✓ a. Built-in electric field in silicon enhances diffusion. ✓  □ b. A built-in field will exist at temperatures at which the semiconductor is intrinsic.
	c. Built-in field will not effect the concentration profile of a dopant, the concentration of which is independent of position.

Your answer is correct.

The correct answer is: Built-in electric field in silicon enhances diffusion.

Correct Mark 1.00 ou of 1.00	Question 3
200000000000000000000000000000000000000	Correct
of 1.00	Mark 1.00 ou
	of 1.00
Question 4	Question 4

The kink and the extended tail in the diffusion profile of phosphorous can be attribited to a. Diffusion enhancement by electric field. b. vacancy assisted diffusion. ✓ c. interstitial assisted diffusion. ✓

Your answer is correct.

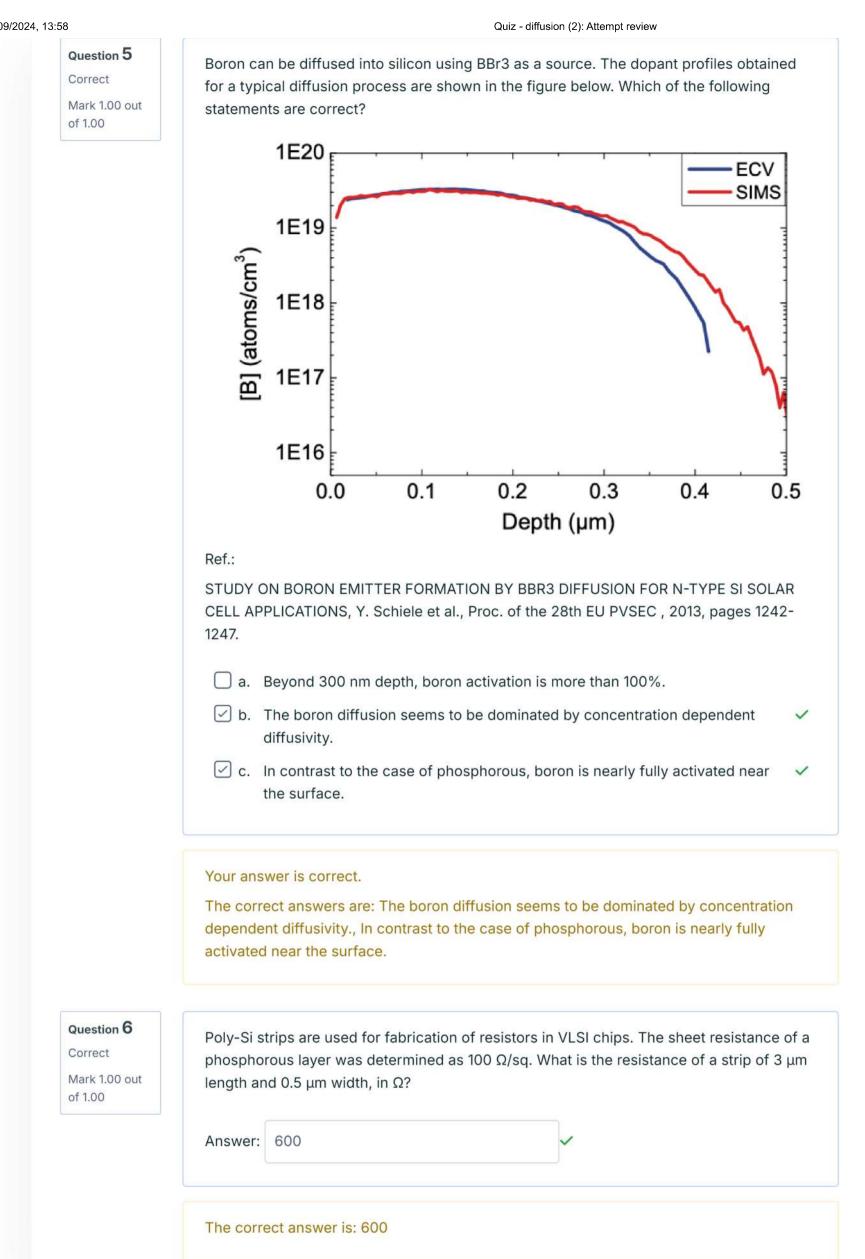
The correct answer is: interstitial assisted diffusion.

Mark 1.00 out of 1.00

Which of the following statements are true for the diffusion of n-type dopants in silicon? a. Antimony diffusion in an oxidizing ambient enhances diffusion. ☑ b. Arsenic diffusion in an oxidizing ambient enhances diffusion. ✓ ✓ c. Phosphorous diffusion in an oxidizing ambient enhances diffusion. ✓

Your answer is correct.

The correct answers are: Phosphorous diffusion in an oxidizing ambient enhances diffusion., Arsenic diffusion in an oxidizing ambient enhances diffusion.



< Previous Activity

Jump to...

**Next Activity** >