Started on	Friday, 29 July 2022, 11:54 PM
State	Finished
Completed on	Saturday, 30 July 2022, 12:22 AM
Time taken	27 mins 56 secs
Grade	**7.0** out of 10.0 (**70**%)

Question **1**

Correct

Mark 0.0 out of 2.0

Which of the following is true ?

Select one:

- a. In intrinsic Silicon at 300°K the number of free electrons is about equal to the number of Silicon atoms
- b. In intrinsic Silicon at 300°K only free electrons can conduct electricity
- c. None of these ✔
- d. In intrinsic Silicon at 300°K there are no free electrons
- e. In intrinsic Silicon at 300°K the number of holes is far less than the number of free electrons

The correct answer is: None of these

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **0.0/2.0**.

Question **2**

Correct

Mark 2.0 out of 2.0

Phosphorus (P) and Arsenic (As) are commonly used as acceptor atoms in silicon.

Select one:

- True
- False ✔

The correct answer is 'False'.

Correct

Marks for this submission: 2.0/2.0.

Question **3**

Correct

Mark 2.0 out of 2.0

If a PN junction is doped with boron at a concentration of 3.4 x 10^18/cm^3 and phosphorus at a concentration of 8.9 x 10^17/cm^3, then what is the built-in voltage in millivolts for this junction? Assume ni = 1.5 x 10^10/cm^3 and Vt = kt/q = 26mV at 300°K. Since small changes in the built-in voltage imply large changes in the doping levels, be sure to give your answer to the nearest millivolt!

Answer: 965.58 ✔

The correct answer is: 966

Correct

Marks for this submission: 2.0/2.0.

Question **4**

Correct

Mark 1.0 out of 2.0

As the reverse bias voltage across a PN junction is decreased, the potential barrier will

Select one:

- a. Stays the same
- b. None of these
- c. Decrease ✔
- d. No way to determine
- e. Increase

The correct answer is: Decrease

Correct

Marks for this submission: 2.0/2.0. Accounting for previous tries, this gives **1.0/2.0**.

Question **5**

Correct

Mark 2.0 out of 2.0

The diffusion capacitance for a PN junction models the variations in the excess charge stored as carriers are injected across the junction with variations in the forward bias voltage applied.

Select one:

- (•) True ✔
- ( ) False

The correct answer is 'True'.

Correct

Marks for this submission: 2.0/2.0.

◄ Practice Quiz 2 - Opamps

Jump to...

Practice Quiz 4 - Diodes ►