Started on	Friday, 19 February 2021, 7:04 PM
State	Finished
Completed on	Friday, 19 February 2021, 7:34 PM
Time taken	30 mins
Grade	**2.00** out of 5.00 (**40%**)

Question 1

Incorrect

Mark 0.00 out of 1.00

Calculate the current (in mA) flowing through a PN junction diode when voltage across diode is 0.68 Volts. Given the reverse saturation current is 84×10^{-15} A and the non-ideality factor as 1. Assume that the diode is working at 300K.

Constants that may require during calculations: The Boltzmann constant (k) = 1.38×10^{-23} JK^{-1}, charge (q) = 1.6×10^{-19} C.

Select one:

○ 21.869

○ 57.527

◉ 38.351 ✗

○ 9.588

Your answer is incorrect.

The correct answer is: 21.869

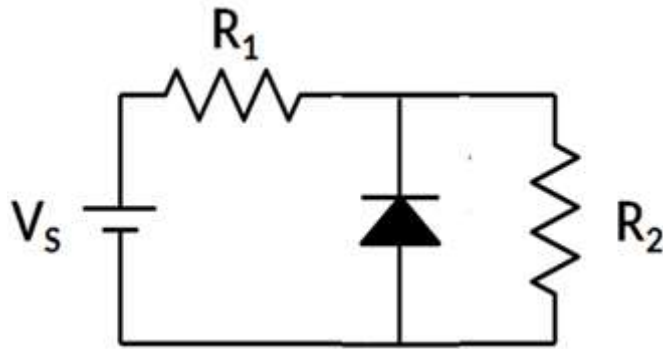The silicon diodes shown in the circuit have a reverse saturation current of 1 nA. Given that the cut-in voltage of the diode is 0.7 V. The supply voltage is V_s = 10 Volt. Find the voltage (in Volt) across resistor R_2 when R_1 = 8.4 kΩ and R_2 = 3.1 kΩ. Assume that the circuit is operating at 300 K.

Select one:

○ 0.7

◉ 2.696 ✓

○ 7.304

○ -10.000

Your answer is correct.

The correct answer is: 2.696
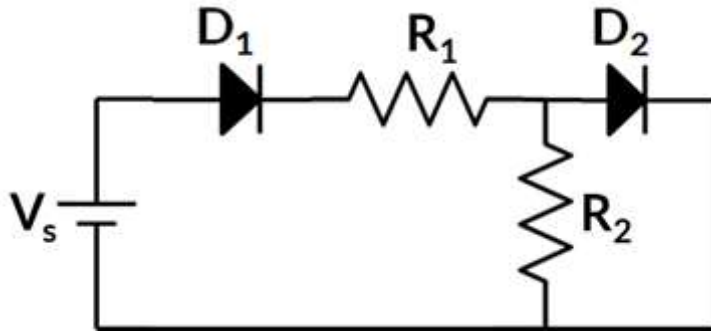
Silicon diodes D_1 and D_2 are having a reverse saturation current of 16 nA. Find the value of R_2 (in kΩ) so that 6.1 mA current flows through R_2 when source voltage V_S = 6 Volt and R_1 = 3.8 kΩ. The cut-in voltage of the diode is 0.7 V and the diode is operating at 300 K.

Select one:

- ○ 1.395
- ○ 0.754
- ◉ 0.869 ✗
- ○ 0.115

Your answer is incorrect.

The correct answer is: 0.115