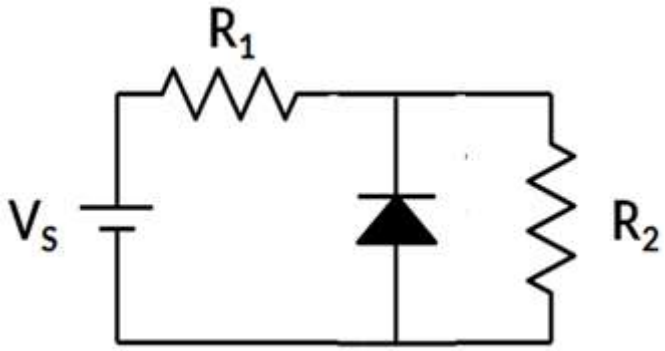
Started on	Friday, 10 June 2022, 8:52 PM
State	Finished
Completed on	Friday, 10 June 2022, 9:04 PM
Time taken	11 mins 45 secs
Grade	**2.00** out of 5.00 (**40**%)

Question 1

Not answered

Marked out of 2.00

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 = 7 Volt. Find the voltage (in Volt) across resistor R_2 when R_1 = 7.7 kΩ and R_2 = 3.9 kΩ. Assume that the circuit is operating at 300 K.



Answer:

The correct answer is: 2.35

Question 2

Correct

Mark 2.00 out of 2.00

Consider a bar of silicon doped with 1×10^{16} cm^{-3} Phosphorus atoms and kept at room temperature. The minority carrier type is _____ and concentration (in cm^{-3}) is_____ .

Given intrinsic carrier concentration $n_i = 1.5\times10^{10}$ cm^{-3}

Note: *In the given options 10E(x) represents 10^x*

Select one:

- electrons and 1.00×10E(16)
- holes and 2.25×10E(4) ✓
- holes and 1.00×10E(16)
- electrons and 2.25×10E(4)

Your answer is correct.

The correct answer is: holes and 2.25×10E(4)

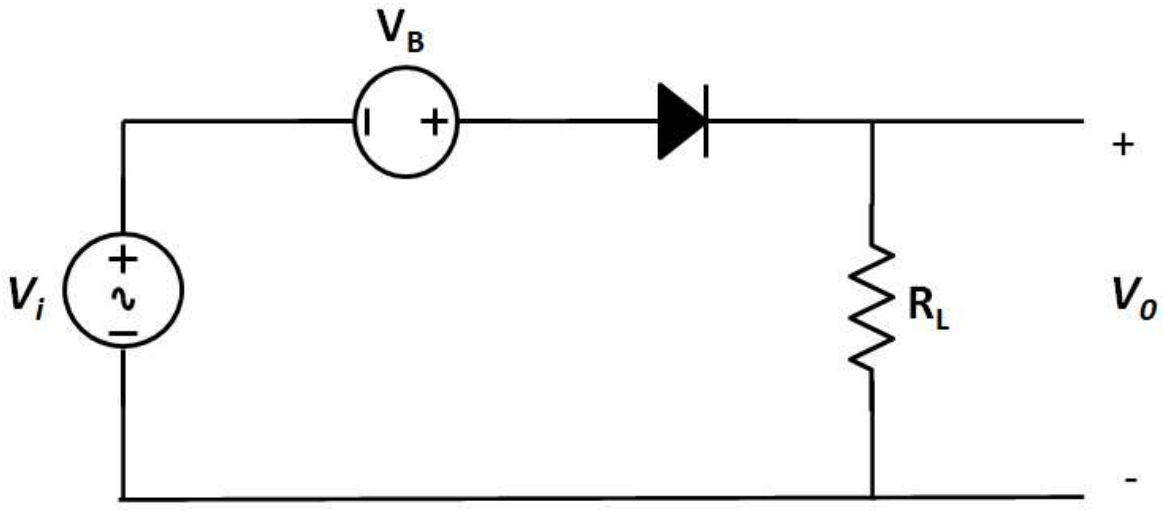
Question 3

Incorrect

Mark 0.00 out of 1.00

A sinusoidal input of 8 V peak value and bias voltage V_B=10 V is applied in the given circuit. What is the peak value in the positive half of the output waveform?

Consider that the diode is an Ideal Diode.



Answer: 9.777 ✗

The correct answer is: 18.00