Post-Lab Intro to Simscape

Due No due date Points 14 Questions 14 Time Limit None

Attempt History

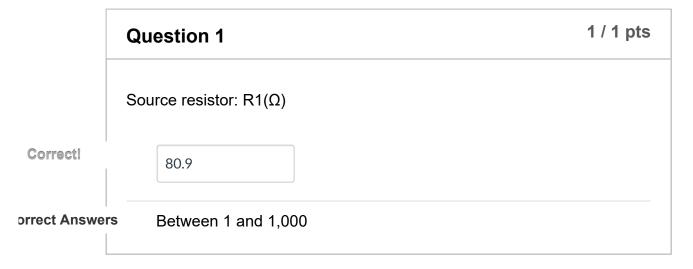
	Attempt	Time	Score
LATEST	Attempt 1	89 minutes	8 out of 14 *

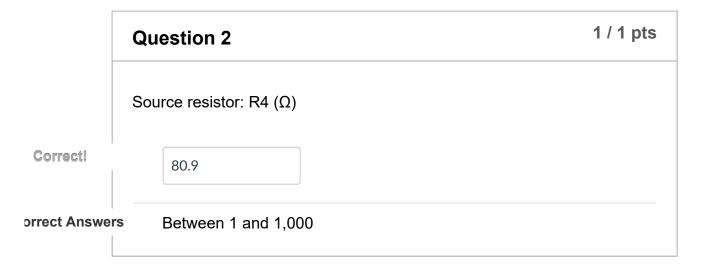
^{*} Some questions not yet graded

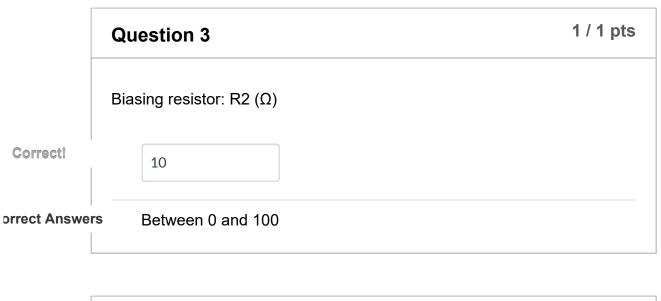
Score for this quiz: 8 out of 14 *

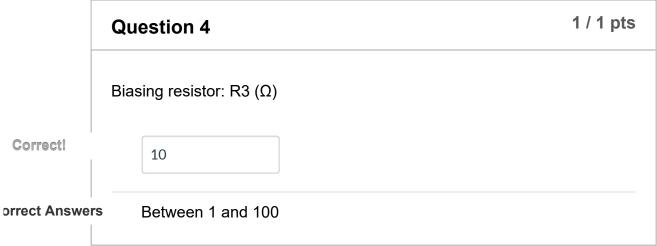
Submitted Feb 18 at 8:03pm

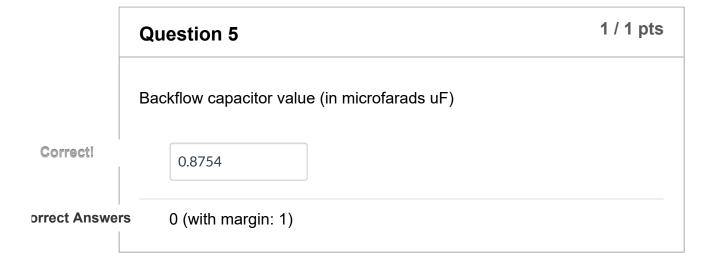
This attempt took 89 minutes.

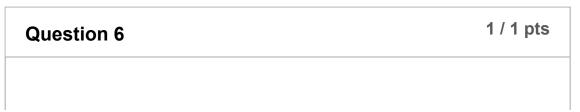












What is the current gain (amps/amps) of your amplifier?

Correct!

10

Between 1 and 50

Question 7

What is the voltage attenuation of your amplifier (volts/volts)?

Correct!

0.21

Between 0 and 1

Question 8 Not yet graded / 1 pts Are there any design improvements you can make to this amplifier (please list 3 or 4)? Your Answer: You can increase the R_{LOAD} You can increase the resistance of R_1 and R_4 You can lower the resistances of R_2 and R_3

Question 9 1 / 1 pts

	Load Resistance value: R_{load} (Ω)
Correct!	4
orrect Answei	rs 4 (with margin: 0)

Question 10

Not yet graded / 1 pts

What is the function of the load resistor? Is its value significant to the performance of the amplifier? Please explain.

Your Answer:

The load resistor is added to simulate something being connected to the circuit.

The numerical value itself is not significant as an arbitrary value but would be in a real-world application.

Question 11

Not yet graded / 1 pts

Identify types of basic circuits used in the construction of this amplifier (please list 3 or 4).

Your Answer:

Resistors in series

Parallel Circuits

RC Circuit

Question 12

Not yet graded / 1 pts

Submit your Simscape model file (both as an image and an .slx model).

(https://sit.instructure.com/files/5828809/download)

Question 13

Not yet graded / 1 pts

Submit plots of V_{in}, I_{in}, V_{out}, and I_{out}.

(https://sit.instructure.com/files/5828793/download)

Question 14

Not yet graded / 1 pts

Detail the characteristics (numerical values) of your amplifier (e.g. Source and Bias Resisters, R_{eq} , C, V_{in} , V_{out} , I_{in} , I_{out} , Current Gain, Voltage Attenuation and whatever else you think is important.)

Your Answer:

$$I_{in} = 0.0183 \text{ A}$$
 $I_{out} = .183 \text{ A}$

$$V_{in} = 3 V$$
 $V_{out} = 0.63 V$

 R_{eq} = 181.8 Ohms

C = 0.8754 microfarads

Current Gain = 10 A/A

Voltage Attenuation = 0.21 V/V

Quiz Score: 8 out of 14