

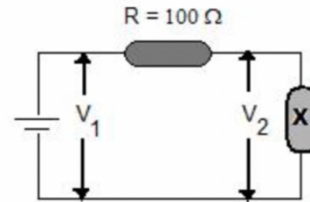
Student ID :  
Name-Surname:

28.05.2020

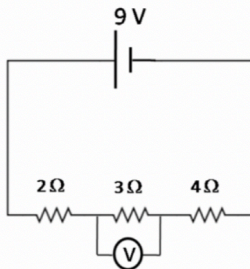
### PHY0152 Physics-II Lab Final Exam

1) Voltage drop measurements for the given circuit are shown in the table. Using these measurement results, plot “ $V_2$  vs  $I$  graph” of the circuit element “X” on a milimetric paper and find the resistance value of it.

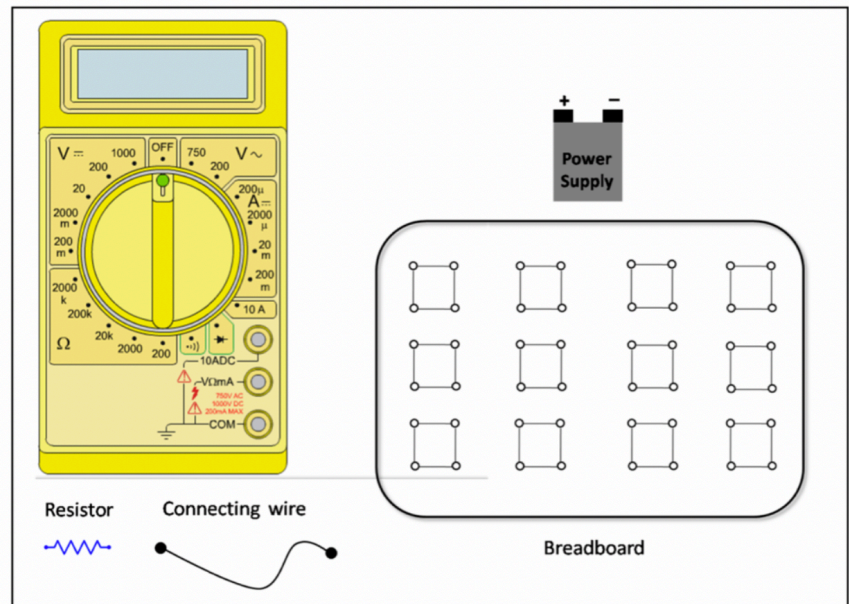
$V_1$ (Volt)	$V_2$ (Volt)	I (Ampere)
0	0	
1	0,330	
3	1,000	
5	1,665	
7	2,330	
9	3,000	
11	3,665	



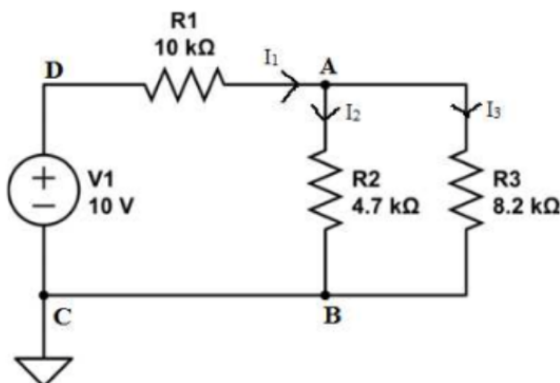
2)



Construct the given circuit by using the breadboard, resistors, connecting wires and multimeter on the experimental setup right side. Connect the multimeter to read the voltage drop across the resistor  $3\Omega$ . Put a marker on the analog dialer to read the voltage drop across  $3\Omega$  and write the voltage drop value on the display of the multimeter.



3) In this experiment you will verify both Kirchhoff's laws. Consider the following circuit

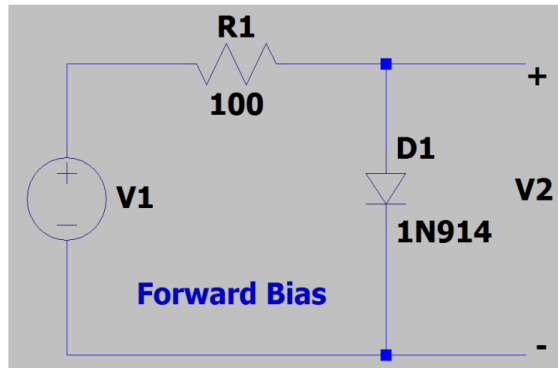


- Consider the figure left side. What is the equivalent resistance between D and C ?
- What is the power provided by the voltage source ? What is the power dissipated by the  $8.2\text{ k}\Omega$  resistor ?
- Propose a method to measure the power in the lab (when you have built the circuit), how will you go about measuring power provided by the source, and consumed by the  $8.2\text{ k}\Omega$  resistor ?

4) What is the differences between an ideal diode and a real diode? Plot I-V characteristics and explain it in detail.

5) Voltage drop measurements for the given circuit are shown in the table. Using these measurement results, plot “V2 vs I graph” of diode on a millimetric paper or draw with using computer program (Excel, matlab etc.) and explain the graph.

V1(Volt)	V2(Volt)	Current I (mA)
0	0	
1	0.643	
2	0.707	
3	0.738	
4	0.76	
5	0.778	
6	0.792	
7	0.806	
8	0.818	
9	0.83	
10	0.84	



**NOTE :** The deadline of the final exam is **7th of June**, Please upload your answer to the orgun- ankara system until then.