

**University of Jordan
School of Engineering
Electrical Engineering Department**

**EE 204
Electrical Engineering Lab**

**EXPERIMENT 2 REPORT & PRE-LAB
RESISTORS AND DC CIRCUITS**

Section # _____ Group # _____

Student Name

ID

- 1.
- 2.
- 3.
- 4.

EXPERIMENT 2 RESISTORS AND DC CIRCUITS

PROCEDURE A - RESISTORS

Table 1

	R_1	R_2	R_3	R_{series}	$R_{parallel}$
Nominal Value	1600 Ω	1200 Ω	1000 Ω		
Color Code					
Tolerance (%)					
Measured Value					
Deviation (%)					

3. Does the deviation you calculated reside within the tolerance declared by the color code?

.....

5. Now connect the three resistors in parallel on the breadboard, and measure the equivalent resistance $R_{parallel}$. Record the nominal, measured and deviation values in Table 1. What is the equation you used to calculate $R_{parallel}$?

.....

6. Are the series and parallel equivalent resistances close to the measured values or not?

.....

PROCEDURE B - VOLTAGE AND CURRENT DIVISION

3. Use theoretical analysis to determine the expected current I and record it in Table 2. What equation did you use?

.....

4. What is the voltage divider equation for the voltage across R_1 ?

.....

Table 2

I Theory (mA)	I point a (mA)	I point b (mA)	I point c (mA)

Table 3

	V_{ab} (V)	V_{bc} (V)	V_{ce} (V)	$V_{ab}+V_{bc}+V_{ce}$	V_S (V)
Theory					9 V
Measured					

9. What is the current divider equation for the current in resistor R_1 ?

.....

Table 4

	I_1 (mA)	I_2 (mA)	I_3 (mA)	$I_1+ I_2+ I_3$	I (mA)	V_{ae} (V)
Theory						
Measured						

PROCEDURE C - CAPACITORS AND INDUCTORS IN DC CIRCUITS

3. What is the current divider equation for the current in resistor R_1 ?

.....

Table 5

	I_1 (mA)	I_2 (mA)	I_3 (mA)	$I_1+ I_2+ I_3$	I (mA)	V_{ae} (V)
Theory						
Measured						

5. What happens to inductors in DC circuits?

.....

6. What happens to capacitors in DC circuits?

.....

PROCEDURE D - NODAL AND MESH ANALYSIS

3. What was the nodal equation you wrote at node b ?

.....

Table 6

	V _{ae} (V)	V _{be} (V)	V _{ce} (V)	V _{de} (V)
Theory				
Measured				
Deviation (%)				

5. What was the mesh equation you wrote for the *left* mesh?

.....

Table 7

	I ₁ (mA)	I ₂ (mA)	I ₃ (mA)	I ₄ (mA)
Theory				
Measured				
Deviation (%)				

CONCLUSIONS

Summarize in clear but concise format what you learned from this experiment:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

**** End ****