

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

**EE 219
Electrical Circuits Lab**

**EXPERIMENT 8 REPORT & PRE-LAB
DELTA-WYE CONVERSION**

Section # _____ Group # _____

Student Name

ID

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

EXPERIMENT 8 DELTA-WYE CONVERSION

PROCEDURE A - Y-Δ TRANSFORMATION

4. Using a voltmeter, measure the voltages V_{ad} , V_{bd} , and V_{cd} , and record the values in Table 1. Pay attention to polarity.

Table 1

V_{ad} (V)		V_{bd} (V)		V_{cd} (V)	
Theory	Meas.	Theory	Meas.	Theory	Meas.

5. Use an ammeter to measure the DC currents I , I_D , and I_E , and record the values in Table 2. Pay attention to polarity.

Table 2

I (mA)		I_D (mA)		I_E (mA)	
Theory	Meas.	Theory	Meas.	Theory	Meas.

6. Convert the Y connection in the above circuit (represented by R_1 , R_2 , and R_3) into a Δ connection, and draw the resulting circuit below.

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9. How is this circuit different than the equivalent circuit you sketched in part 6 above?

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11. Using a voltmeter, measure the voltages V_{ad} , V_{bd} , and V_{cd} , and record the values in Table 3. Pay attention to polarity.

Table 3

V_{ad} (V)		V_{bd} (V)		V_{cd} (V)	
Theory	Meas.	Theory	Meas.	Theory	Meas.

12. Use an ammeter to measure the DC currents I , I_D , and I_E , and record the values in Table 4. Pay attention to polarity.

Table 4

I (mA)		I_D (mA)		I_E (mA)	
Theory	Meas.	Theory	Meas.	Theory	Meas.

13. Are the results in Tables 1 and 2 close to the values in Tables 3 and 4?

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14. Why are the values in Tables 1 and 2 not exactly the same as the values in Tables 3 and 4?

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PROCEDURE B - Δ-Y TRANSFORMATION

4. Draw the equivalent circuit after you did the Δ-Y transformation for the frequency 10000 Hz.

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6. Where did you place the oscilloscope channel probes when measuring V_{bd} ?

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Table 5

AC Source Frequency (Hz)	V_{bd} (peak) (V)		$\angle V_{bd}$ with V_s (degrees)		V_{cd} (peak) (V)		$\angle V_{cd}$ with V_s (degrees)	
	Theory	Meas.	Theory	Meas.	Theory	Meas.	Theory	Meas.
10000								
60000								

