



**JABATAN KEJURUTERAAN ELEKTRIK  
PUSAT PENGAJIAN DIPLOMA (PPD), SPACE  
UNIVERSITI TEKNOLOGI MALAYSIA  
KUALA LUMPUR**

**DDWE 1711 ELECTRICAL ENGINEERING LABORATORY  
1  
(CIRCUIT THEORY 1)**

**REPORT SHEET 2  
PARALLEL AND SERIES-PARALLEL CIRCUITS**

<b>Group members</b>	1.
	2.
	3.
	4.
	5.
<b>Lecturer</b>	:
<b>Date</b>	:

<b>No.</b>	<b>PO</b>	<b>CO</b>	<b>Student Marks</b>	<b>Marks</b>
<b>1</b>	<b>PO1</b>	<b>CO1</b>		<b>50%</b>
<b>2</b>	<b>PO2</b>	<b>CO2</b>		<b>40%</b>
<b>3</b>	<b>PO8</b>	<b>CO6</b>		<b>10%</b>
<b>Total Marks</b>				<b>/ 100%</b>

**EXPERIMENT 2 : PARALLEL AND SERIES-PARALLEL CIRCUITS**

**Part A: Parallel Circuit**

Step 1 and Step 2

Component	Measured Value (kΩ)	Color Code (kΩ)
<b>R<sub>1</sub></b>		
<b>R<sub>2</sub></b>		
<b>R<sub>3</sub></b>		

**Table 1**

Step 3. Step 6 and Step 7

Diagram of a parallel circuit with a voltage source and the ammeter position to measure the total current.

Figure 2.1

Step 4

Total resistance = .....

<b>PO1</b>	<b>CO1</b>	.....	/2m
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<b>PO1</b>	<b>CO1</b>	.....	/2m
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Step 5

Calculation: Total resistance for parallel circuit.

<b>PO1</b>	<b>CO1</b>	.....	/2m
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Step 9

Total current = .....

<b>PO1</b>	<b>CO1</b>	..... /2m
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Step 10 and Step 11

Component	Measured Value (kΩ)	Voltage (V)	Current (mA)
<b>R<sub>1</sub></b>			
<b>R<sub>2</sub></b>			
<b>R<sub>3</sub></b>			

Table 2

Step 12

Calculation: Proving the Kirchhoff's Current Law.

<b>PO1</b>	<b>CO1</b>	..... /3m
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Step 13

Do all LEDs light up? Discuss your observation.

<b>PO1</b>	<b>CO1</b>	..... /5m
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Step 14

What was the effect when one LED is taken out from the circuit? Discuss your observation.

<b>PO1</b>	<b>CO1</b>	.....	<b>/5m</b>
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**Conclusion for Part A:**

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.....

.....

.....

<b>PO1</b>	<b>CO1</b>	.....	<b>/5m</b>
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**Part B: Series-Parallel Circuit**

Step 1

Component	Measured Value (kΩ)
<b>R<sub>1</sub></b>	
<b>R<sub>2</sub></b>	
<b>R<sub>3</sub></b>	
<b>R<sub>4</sub></b>	

**Table 3**

Step 3

Total resistance = .....

<b>PO1</b>	<b>CO1</b>	.....	<b>/2m</b>
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Step 4

Calculation: Total resistance for series-parallel circuit.

<b>PO1</b>	<b>CO1</b>	.....	<b>/3m</b>
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Step 6

Diagram of a series-parallel circuit with a voltage source and the ammeter position to measure the total current.

Figure 2.2

<b>PO1</b>	<b>CO1</b>	.....	<b>/2m</b>
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Step 8

Total current = .....

<b>PO1</b>	<b>CO1</b>	.....	<b>/2m</b>
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Step 9 and Step 10

Component	Measured Value (kΩ)	Voltage (V)	Current (mA)
<b>R<sub>1</sub></b>			
<b>R<sub>2</sub></b>			
<b>R<sub>3</sub></b>			
<b>R<sub>4</sub></b>			

**Table 4**

Step 11

Calculation: Current flowing through  $R_3$  and  $R_4$  using current divider rule.

PO1	CO1	.....	/3m
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Step 13

Total current =

PO1	CO1	.....	/2m
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Does the total current increase or decrease with the presence of the LEDs in the circuit? Give reasons for the change in the total current.

PO1	CO1	.....	/5m
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**Conclusion for Part B:**

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

PO1	CO1	.....	/5m
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**Guideline for ethic rubric (PO8):**

ETHIC AND PROFESSIONAL MORAL ( 100 marks)					
Scale :	1 (5marks)	2 (10marks)	3 (15marks)	4 (20marks)	5 (25marks)
<b>Criteria</b> ✓ Understand the economic, environmental and socio-cultural impacts of professional practice	Very Poor	Poor	Moderate	Good	Excellent
<b>A. Professional Practice (Punctuality/Follow the Rules)</b>	Tidak menepati/ Tidak Mematuhi	Kurang menepati/ Kurang mematuhi	Adakala menepati / Adakala mematuhi	Menepati / Mematuhi	Sentiasa menepati / Sentiasa mematuhi
<b>B. Ethical Behavior (Trustworthy / Respectfulness)</b>	Tidak mengamalkan	Kurang mengamalkan	Adakala mengamalkan	Mengamalkan	Sentiasa mengamalkan
<b>C. Social Cultural ( Racial Harmony)</b>	Tidak mengamalkan	Kurang mengamalkan	Adakala mengamalkan	Mengamalkan	Sentiasa mengamalkan
<b>D. Sahsiah Rupa Diri</b>	Tidak menepati	Kurang menepati	Adakala menepati	Menepati	Sentiasa menepati

**Guideline of practical skill rubric (PO2) :**

Practical skill ( 100 marks)						
Scale :	1 (5marks)	2 (10marks)	3 (15marks)	4 (20marks)	5 (25marks)	
<b>Criteria</b> ✓ Demonstrate the practical skill	Very Poor	Poor	Moderate	Good	Excellent	<b>Marks</b>
<b>A. Circuit assembly/construction</b>	5	10	15	20	25	
<b>B. Using appropriate measurement equipment and technique</b>	5	10	15	20	25	
<b>C. Troubleshooting skill and technique</b>	5	10	15	20	25	
<b>D. Follow lab regulation</b>	5	10	15	20	25	
	<b>Total marks</b>					