

EEM 206 ELECTRIC CIRCUITS LABORATORY-II

RESULTS OF LAB EXPERIMENTS

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1992**

Electrical-Electronics Engineering Department
Electric Circuits Laboratory-II
(EEM206)

Lab Report #1
Experiment #1

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Experiment Coordinator

Student Name

Student ID.....

Experiment Participants

Student Name

Student ID.....

Student Name

Student ID.....

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

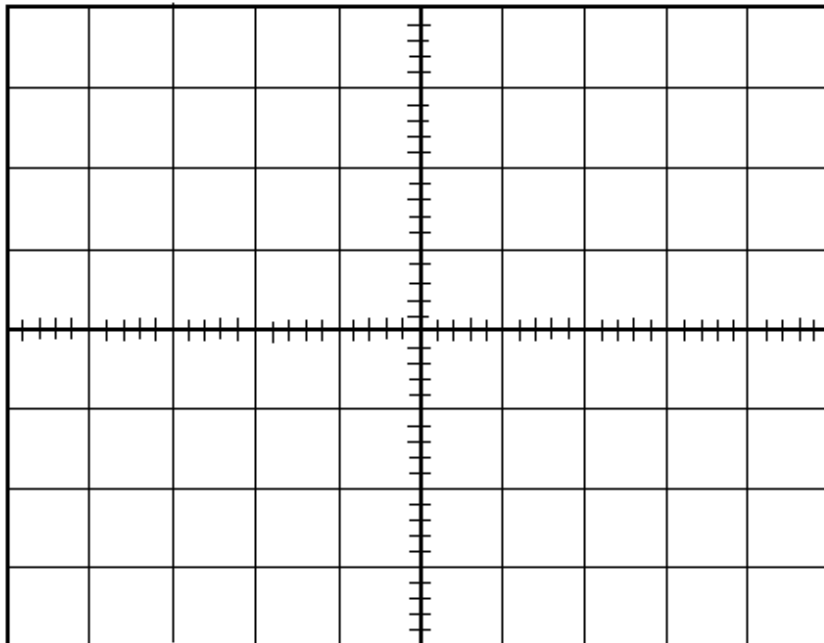
Experiment 1: Frequency, Amplitude and Phase Measurement for Basic AC /RC Circuits
Lab. Group No :

Prepared By : ; ;

Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	V_s (measured with multimeter)	
2	V_{R1} (measured with multimeter)	
3	V_{C1} (measured with multimeter)	
4	I_s (measured with multimeter)	
5	V_s için: V_{pp} , $V_p(\max)$, f , $T(\text{period})$	
6	For I_s : I_{pp} , $I_p(\max)$, f , $T(\text{period})$	
7	For V_{C1} : V_{pp} , $V_p(\max)$, f , $T(\text{period})$	
8	For V_{R1} : V_{pp} , $V_p(\max)$, f , $T(\text{period})$	

Oscilloscope Screen



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 2: Basic AC RC and RL Circuits

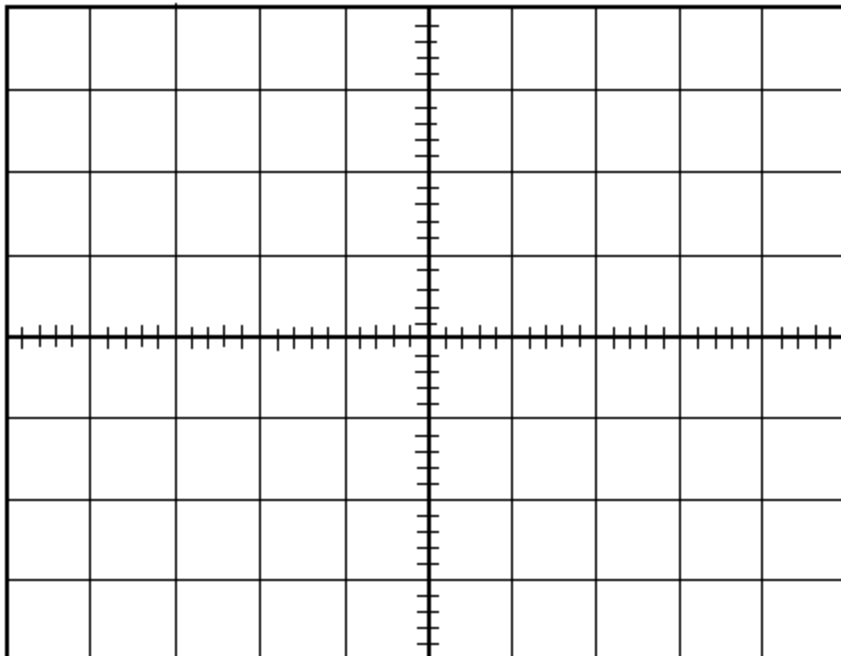
Lab. Group No :

Prepared By :;;

Table 1: The results of the calculations and measurements.

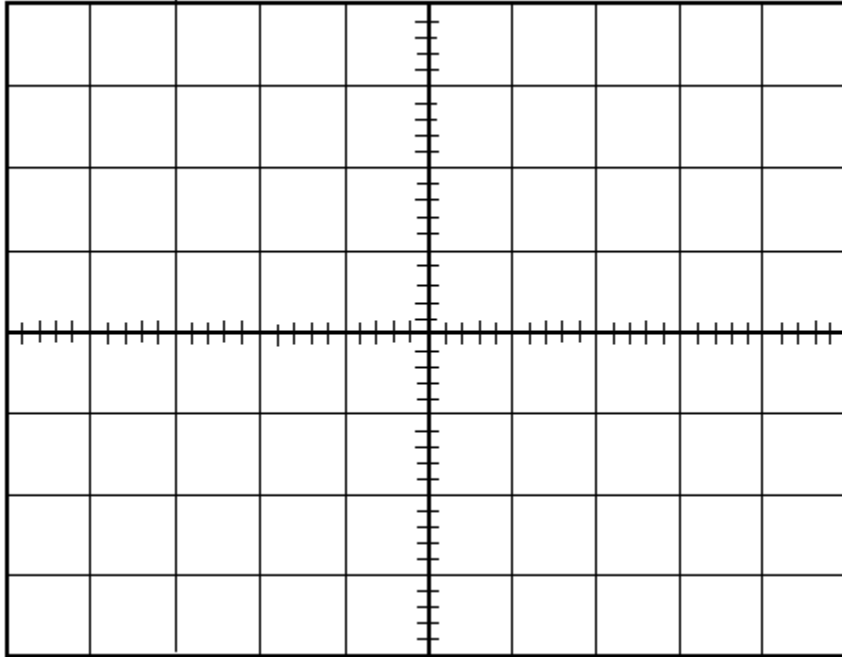
	Calculated/Measured Quantity (100Hz, 1kHz, 2kHz, 5kHz için)	Value and Unit
1	V_C	
2	V_R (For RC circuit)	
3	V_S (For RC circuit)	
4	V_L	
5	V_R (For RL circuit)	
6	V_S (For RL circuit)	

Oscilloscope Screen
For RC circuit



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	

For RL circuit



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	

CONCLUSIONS and COMMENTS

Compare and interpret the results you obtained from experiments. Express the results clearly.
(Interpret how the measurements differ by changing the R and C values.)

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 3: Serial AC RLC Circuits

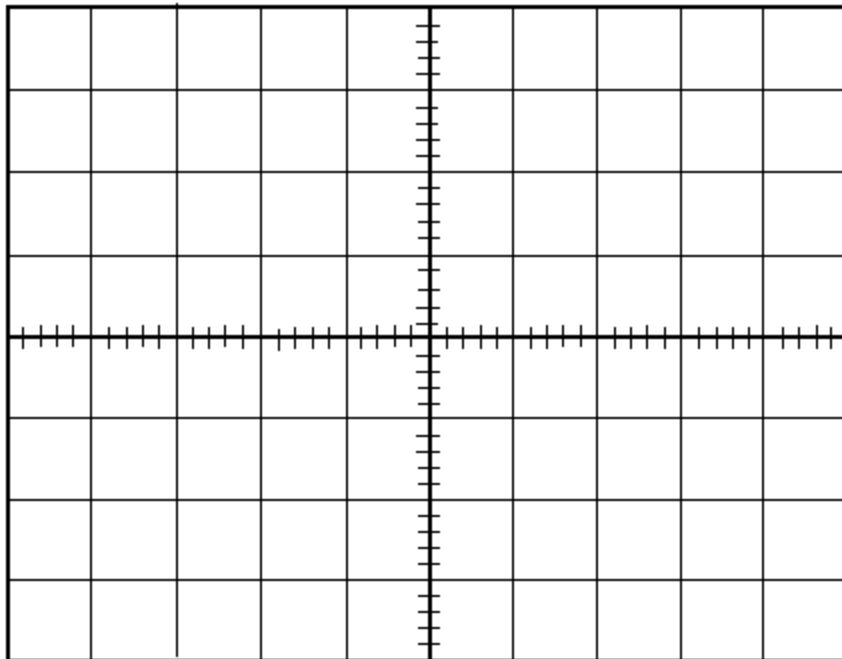
Lab. Group No :

Prepared By : ; ;

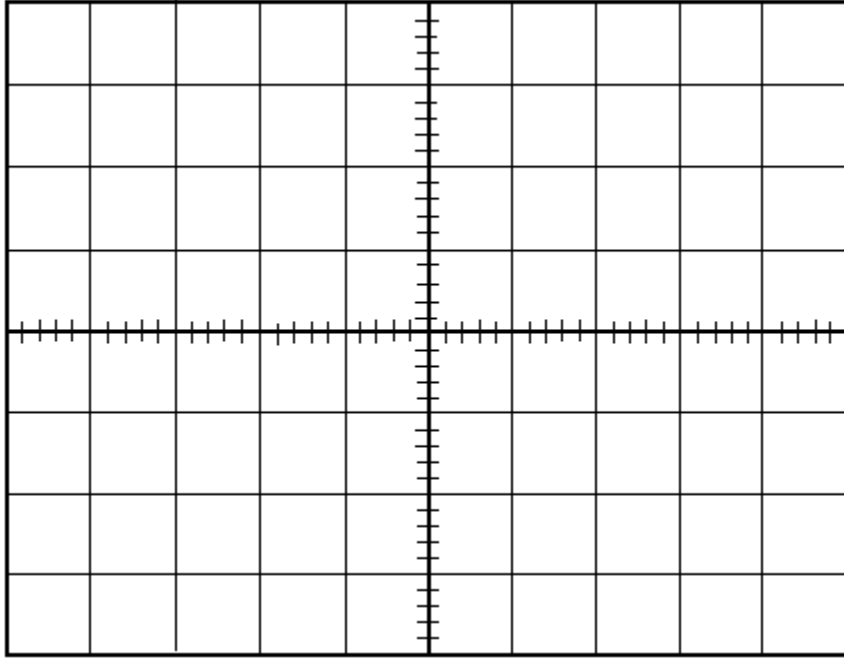
Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	For V_s : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_s(\text{phase angle})$	
2	For V_2 : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_{V_2}(\text{phase angle})$	
3	For V_{R_2} : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_{R_2}(\text{phase angle})$	
4	For V_1 : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_{V_1}(\text{phase angle})$	

Oscilloscope Screen



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 4: Parallel RLC Circuits

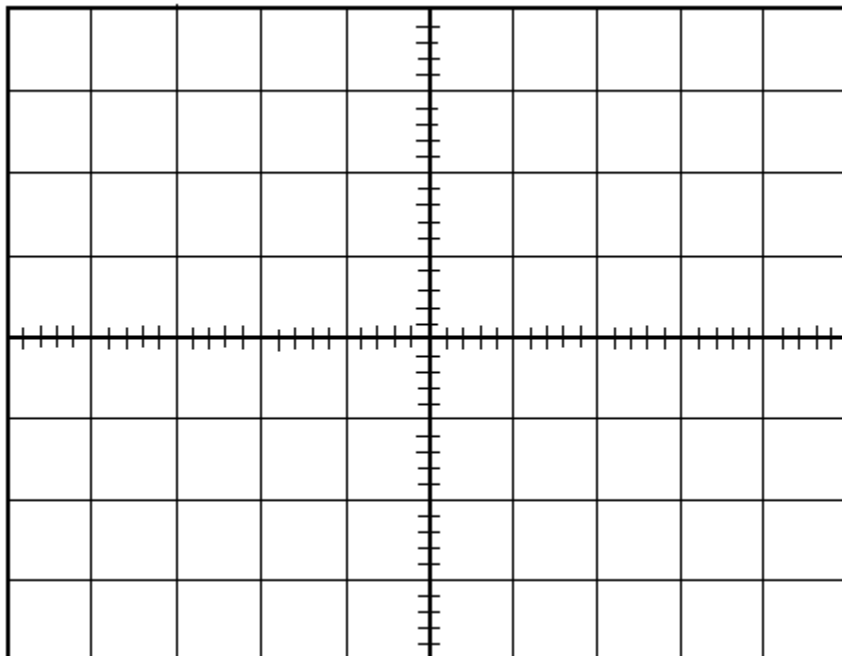
Lab. Group No :

Prepared By :;;

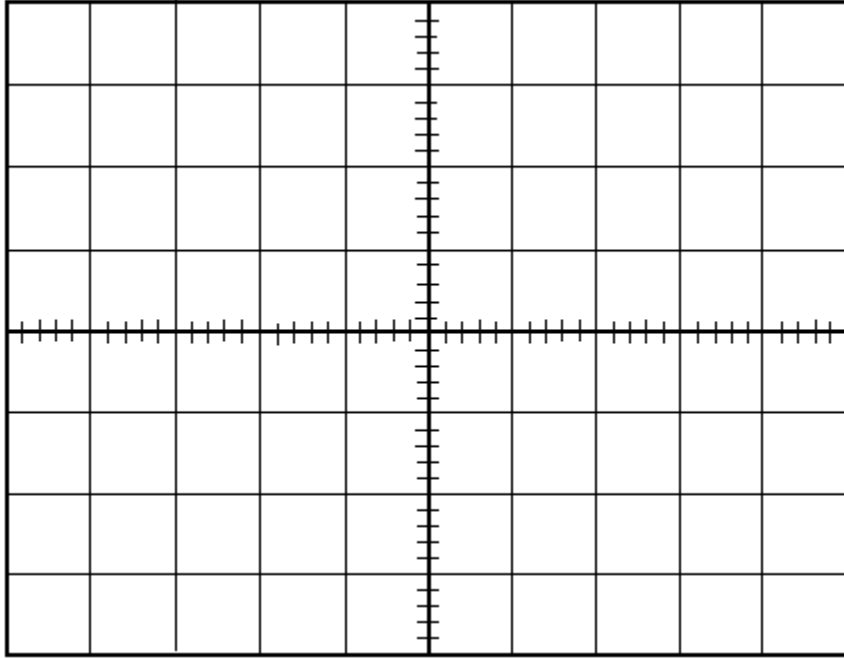
Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	For V_s : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_s(\text{phase angle})$	
2	For V_2 : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_{V_2}(\text{phase angle})$	
3	For V_{R_2} : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_{R_2}(\text{phase angle})$	
4	For V_1 : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta_{V_1}(\text{phase angle})$	

Oscilloscope Screen



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	



TIME/DIV	
VOLT/DIV (CH1)	
VOLT/DIV (CH2)	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 5: Power in AC Circuits

Lab. Group No :

Prepared By : ; ;

Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	For V_s : V_{pp} , $V_p(\max)$, f , $T(\text{period})$	
2	For I_s : I_{pp} , $I_p(\max)$, f , $T(\text{period})$	
3	Phase difference between V_{R1} and V_s	
4	For V_s : V_{pp} , $V_p(\max)$, f , $T(\text{period})$ (with C_1 capacitor)	
5	For I_s : I_{pp} , $I_p(\max)$, f , $T(\text{period})$ (with C_1 capacitor)	
6	Phase difference between V_{R1} and V_s (with C_1 capacitor)	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 6: Application of Transformer

Lab. Group No :

Prepared By : ; ;

Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	For V_2 : V_{pp} , $V_p(\max)$, f , $T(\text{period})$, $\theta(\text{phase})$	
2	For I_2 : I_{pp} , $I_p(\max)$, f , $T(\text{period})$, $\theta(\text{phase})$	
3	Average power and reactive power which source generated	
4	Average power and reactive power consumed on the load	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 7: Balanced 3-Phase Y-Y Connected Circuits

Lab. Group No :

Prepared By :;;

Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	Line and phase voltage and current for the load (as amplitude and phase)	
2	Power that each phase load used up (According to the ground)	
3	Total average power that load used up	
4	Total power that load used up (with 2-wattmeter method)	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 8: Balanced 3-Phase Δ - Δ Connected Circuits

Lab. Group No :

Prepared By : ; ;

Table 1: The results of the calculations and measurements.

	Calculated/Measured Quantity	Value and Unit
1	I_{AB}	
2	I_{BC}	
3	I_{CA}	
4	I_{aA}	
5	I_{bB}	
6	I_{cC}	
7	I_{ba}	
8	I_{cb}	
9	I_{ac}	
10	V_{AB}	
11	V_{BC}	
12	V_{CA}	
13	Yükün her bir fazındaki gücü	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval:

TABLES OF EXPERIMENTAL RESULTS

(At the end of the experiment, please have the lab. supervisor ratify this experiment results table and deliver it)

Experiment 9: Passive Filters

Lab. Group No :

Prepared By : ; ;

Table 1: The results of the calculations and measurements (**For Low-pass Filter**)

	Calculated/Measured Quantity	Value and Unit
1	V_0 (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz))	
3	V_{0_dB} (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz) (calculated)	
4	Frequency-Amplitude graph	
5	Cut off frequency (determined by using graphic)	

Table 2: The results of the calculations and measurements (For High-pass Filter)

	Calculated/Measured Quantity	Value and Unit
1	V_0 (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz))	
3	V_{0_dB} (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz)) (calculated)	
4	Frequency-Amplitude graph	
5	Cut off frequency (determined by using graphic)	

Table 3: The results of the calculations and measurements (For Band-pass Filter)

	Calculated/Measured Quantity	Value and Unit
1	V_0 (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz))	
3	V_{0_dB} (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz)) (calculated)	
4	Frequency-Amplitude graph	
5	Cut off frequency (determined by using graphic)	

Table 4: The results of the calculations and measurements (For Band-stop Filter)

	Calculated/Measured Quantity	Value and Unit
1	V_0 (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz))	
3	V_{0_dB} (for 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 40, 60, 80 ve 100 (kHz)) (calculated)	
4	Frequency-Amplitude graph	
5	Cut off frequency (determined by using graphic)	

CONCLUSIONS and COMMENTS

1. Report all the procedures and measurements done in the experiment section. Add your comments.
2. Compare the theoretical and measurement values of the circuit.

Laboratory Supervisor Approval: