UM-SJTU Physics Laboratory VP241
Data Sheet (Exercise 5)

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Group: 8 Date: 11.8

NOTICE. Please remember to show the data sheet to your instructor before leaving the laboratory. The data sheet will not be accepted if the data are recorded with pencil or modified by correction fluid/tape. If a mistake is made in recording a datum item, cancel the wrong value by drawing a fine line through it, record the correct value legibly, and ask your instructor to confirm the correction. Please remember to take a record of the precision of the instruments used.
You are required to hand in the original data with your lab report, so please keep the data sheet properly.

R 99.64 [Ω] ± 0.01 [Ω], f 5.00000 [kHz] ± 0.001 [Hz], $\mathcal{E}$ 4.000 [V_{pp}] ± 0.001 [V_{pp}]	
C 101.2 [nF] ± 0.1 [nF]	$T_{1/2}$ 7.000 [μS] ± 0.001 [μS]

Table 1. $T_{1/2}$ measurement data for a RC series circuit.

R 99.64 [Ω] ± 0.01 [Ω], f 1.00000 [kHz] ± 0.001 [Hz], $\mathcal{E}$ 4.00 [V_{pp}] ± 0.001 [V_{pp}]	
L 0.01 [H] ± 0 [H]	$T_{1/2}$ 80.00 [μS] ± 0.01 [μS]

Table 2. $T_{1/2}$ measurement data for a RL series circuit.

L 0.01 [H] ± 0 [H], C 101.2 [nF] ± 0.1 [nF], $\mathcal{E}$ 4.000 [V_{pp}] ± 0.001 [V_{pp}] f 100.000 [kHz] ± 0.001 [Hz]	
$\beta t = 1.68$	$T_{1/2}$ = 10.00 [μS] ± 0.01 [μS]

Table 3. $T_{1/2}$ measurement data for a critically damped RLC series circuit.

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R 99.64 [Ω] ± 0.01 [Ω], L 9.0 [H] ± 0 [H], C 101.21 [nF] ± 0.01 [nF]

f_0 5.000000 [kHz] ± 0.001 [Hz], $\mathcal{E}$ 4.000 [Vpp] ± 0.001 [Vpp]

	U_R [Vpp] ± 0.02/0.00 [Vpp]		f [kHz] ± 0.001 [Hz]	
1	4.20	0.304	3.000000	1.000000
2	3.80	0.648	5.000000	2.000000
3	1.72	1.15	7.000000	3.000000
4	1.04	1.74	9.000000	4.000000
5	0.760	3.80	11.000000	5.000000
6	0.600	2.60	13.000000	6.000000
7	0.480	1.68	15.000000	7.000000
8	0.432	1.28	17.000000	8.000000
9	0.392	1.04	19.000000	9.000000
10	0.336	0.880	21.000000	10.000000
11		0.760		11.000000
12		0.680		12.060000
13		0.640		13.000000
14		0.560		14.000000
15		0.520		15.000000
16		0.480		16.000000
17		0.440		17.000000
18		0.420		18.000000
19		0.392		19.000000
20		0.340		20.000000
21		0.320		21.000000

Table 4. Measurement data for the U_R vs. f dependence for a RLC resonant circuit.

3.44

3.68

3.68

3.64

3.32

4.500000

4.200000

4.800000

5.300000

5.500000

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