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

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Group: 01 Date: _____

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 99.75 [Ω] ± 0.01 [Ω], f 1.000 [kHz] ± 0.001 [kHz], $\mathcal{E}$ 4.000 [V] ± 0.001 [V]	
C 99.84 [nF] ± 0.01 [nF]	$T_{1/2}$ 1.000 [ms] ± 0.001 [ms]

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

R 99.75 [Ω] ± 0.01 [Ω], f 1.000 [kHz] ± 0.001 [kHz], $\mathcal{E}$ 4.000 [V] ± 0.001 [V]	
L 0.01 [H] ± 0 [H]	$T_{1/2}$ 66.00 [ms] ± 0.01 [ms]

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

L 0.01 [H] ± 0 [H], C 99.84 [nF] ± 0.01 [nF], $\mathcal{E}$ 4.000 [V] ± 0.001 [V], f 1.000 [kHz] ± 0.001 [kHz]	
$T_{0.264}$ = 30.00 [ms] ± 0.01 [ms]	

$\mu = 0.5/0$

Table 3. $T_{0.264}$ measurement data for a critically damped RLC series circuit.

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R 99.75 [Ω] ± 0.01 [Ω], L 0.01 [H] ± 0 [H], C 99.84 [nF] ± 0.01 [nF]

f_0 5.029 [kHz] ± ~~0.001~~ [kHz], $\mathcal{E}$ 4.000 [V] ± 0.001 [V]

	U_R [V] ± 0.01 [V]	f [kHz] ± ~~0.001~~ [kHz]
1	0.39	21.420
2	0.78	11.120
3	1.17	8.600
4	1.56	7.420
5	1.95	6.730
6	2.34	6.300
7	2.73	6.000
8	3.12	5.700
9	3.51	5.450
10	3.66	5.340
11	~~5.029~~ 3.90	5.029
12	3.66	4.710
13	3.51	4.640
14	3.12	4.430
15	2.73	4.230
16	2.34	4.010
17	1.95	3.740
18	1.56	3.400
19	1.17	2.920
20	0.78	2.180
21	0.39	1.090

0.94 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1

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

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