UM-SJTU Physics Laboratory Vp241
Data Sheet (Exercise 5)

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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 100 [Ω] ± 1 [Ω], f 1.000000 [kHz] ± 0.000001 [kHz], $\mathcal{E}$ 4.000 [Vpp] ± 0.001 [Vpp]	
C 126.46 [nF] ± 0.01 [nF]	$T_{1/2}$ 8.0 [μs] ± 0.1 [μs]

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

R 100 [Ω] ± 1 [Ω], f 1.000000 [kHz] ± 0.000001 [kHz], $\mathcal{E}$ 4.000 [Vpp] ± 0.001 [Vpp]	
L 0.01 [H] ± 0.001 [H]	$T_{1/2}$ 35.0 [μs] ± 0.1 [μs]

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

L 0.01 [H] ± 0.001 [H], C 126.46 [nF] ± 0.01 [nF], $\mathcal{E}$ 4.000 [Vpp] ± 0.001 [Vpp], f 1.000000 [kHz] ± 0.000001 [kHz]	
$\beta t = 1.68$	$T_{1/2}$ = 33.0 [μs] ± 0.1 [μs]

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

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R 100 [Ω] ± 1 [Ω], L 0.01 [H] ± 0.001 [H], C 490.9 [nF] ± 0.1 [nF]		
f_0 2.211094 [kHz] ± 0.000001 [kHz], $\mathcal{E}$ 4.000 [Vpp] ± 0.001 [Vpp]		
	U_R [V] ± 0.001 [V]	f [kHz] ± 0.000001 [kHz]
1	1.767	1.000000
2	1.833	1.100000
3	2.167	1.200000
4	2.333	1.300000
5	2.567	1.400000
6	2.833	1.500000
7	3.067	1.600000
8	3.233	1.700000
9	3.467	1.800000
10	3.733	1.900000
11	3.967	2.000000
12	4.100	2.100000
13	4.167	2.200000
14	4.233	2.300000
15	4.167	2.400000
16	4.033	2.500000
17	3.900	2.600000
18	3.733	2.700000
19	3.667	2.800000
20	3.467	2.900000
21	3.333	3.000000

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

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