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

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Group: 19 Date: 2019/11/01

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 99.90 [Ω] ± 0.01 [Ω], f ~~5.000~~ 5000.000 [~~kHz~~ Hz] ± 0.001 [Hz], $\mathcal{E}$ ~~4.12~~ 4.000 [V_{pp}] ± ~~0.01~~ 0.001 [V_{pp}]	
C 101.85 [nF] ± 0.01 [nF]	$T_{1/2}$ 8.000 [μs] ± 0.001 [μs]

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

R 99.90 [Ω] ± 0.01 [Ω], f 1000.000 [Hz] ± 0.001 [Hz], $\mathcal{E}$ ~~4.24~~ 4.000 [V_{pp}] ± ~~0.01~~ 0.001 [V_{pp}]	
L 0.01 [H] ± 0 [H]	$T_{1/2}$ 70.00 [μs] ± 0.01 [μs]

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

L 0.01 [H] ± 0 [H], C 101.85 [~~μF~~ nF] ± 0.01 [nF], $\mathcal{E}$ ~~4.00~~ 4.000 [V_{pp}] ± ~~0.01~~ 0.001 [V_{pp}], f 1000.000 [Hz] ± 0.001 [Hz]	
$\beta t = 1.68$	$T_{1/2} =$ 50.00 [μs] ± 0.01 [μs]

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

Instructor's signature:

4.000 0.001

R 99.90 [Ω] ± 0.01 [Ω], L 0.01 [H] ± 0 [H], C 101.85 [nF] ± 0.01 [nF]

f_0 5100.00 [Hz] ± 0.001 [Hz], $\mathcal{E}$ ~~4.08~~ [V_{pp}] ± ~~0.01~~ [V_{pp}]

		U_R [V_{pp}] ± ~~0.01~~ 0.02 [V_{pp}]	f [Hz] ± 0.001 [Hz]
✓	1	1.00	2700.000
	2	1.12	2900.000
✓	3	1.32	3200.000
	4	1.64	3500.000
✓	5	1.88	3700.000
	6	2.12	3900.000
✓	7	2.44	4100.000
✓	8	2.84	4300.000
✓	9	3.04	4400.000
✓	10	~~3.42~~ 3.40	4600.000
✓	11	3.56	4700.000
✓	12	3.72	4800.000
✓	13	3.80	4900.000
✓	14	~~3.88~~ 3.84	5000.000
✓	15	3.88	~~5050.000~~ ~~5100.000~~ ~~5050.000~~ 5100.000
✓	16	3.84	5150.000
✓	17	3.72	5250.000
✓	18	3.56	5400.000
✓	19	3.24	5600.000
✓	20	2.92	5800.000
	21	2.68	6000.000

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

✓	22	2.28	6300.000
	23	1.96	6700.000
✓	24	1.72	7000.000
	25	1.56	7400.000
✓	26	1.32	7900.000
	27	1.20	8400.000
	28	1.12	8800.000
	29	1.04	9000.000
✓	30	1.00	9400.000

Instructor's signature: _____

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