SAKARYA UNIVERSITY
PHYSICS LABORATORY II
2019-2020

EXPERIMENT REPORT

EXPERIMENT NUMBER	3
EXPERIMENT NAME	Finding RC time constant
DATE	
GROUP NUMBER	
GROUP MEMBERS	

DEPARTMENT:

NAME-SURNAME:

NUMBER:

DELIVERY DATE:

REPORT SCORE:

Measurements and Calculations

1. Calculate -In(I) for each current value and fill it in the table. Also find the time until each current value is reached and fill it in the table. *(20 p.)*

I (A)	-ln(I)	t(s)
$10,0.10^{-6}$		0
$9,5.10^{-6}$		
$9,0.10^{-6}$		
$8,5.10^{-6}$		
$8,0.10^{-6}$		
$7,5.10^{-6}$		
$7,0.10^{-6}$		
$6,5.10^{-6}$		
$6,0.10^{-6}$		
$5,5.10^{-6}$		
$5,0.10^{-6}$		
$4,5.10^{-6}$		
$4,0.10^{-6}$		
$3,5.10^{-6}$		
$3,0.10^{-6}$		
$2,5.10^{-6}$		
$2,0.10^{-6}$		
$1,5.10^{-6}$		
$1,0.10^{-6}$		
$0,5.10^{-6}$		

2. Using the data in the table, plot the *-ln(I) – t* chart on millimeter paper. (please, add the chart your report) *(30 p.)*

3. Find the RC time constant from the slope of the line from graph. (Please, show clearly how you find the slope on the line) *(30 p.)*

   RC (exp.) = ...

4. Calculate the theoretical value of the RC time constant. (C= 60 µF ve R= 1 MΩ) **(10 p.)**

   RC (theo.) = ...

5. Find the % error using theoretical and experimental RC time costant values. *(10 p.)*