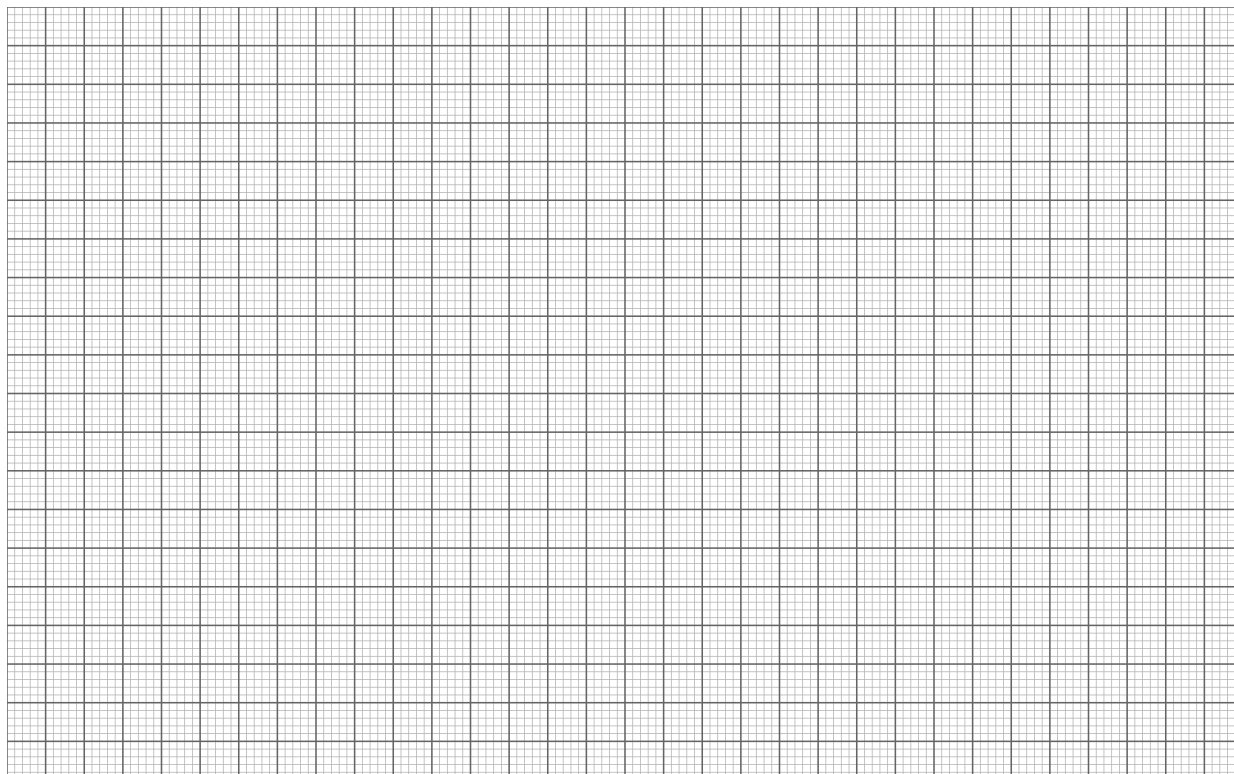


Non-ideal capacitors (10 points)

Part A. Capacitors at room temperature (4.0 points)

A.1 (2.3 pt)

Graph $C_1(U)$ and $C_2(U)$ on the millimeter paper:



Fill the table with the corresponding values:

U	C_1	C_2
0V		
3V		
6V		

$C(U) =$

Experiment conditions:

Board ID =

$T_{\text{room}} =$

A.2 (0.5 pt)

$U_{\text{max change}} =$

At capacitor (check): ☐ C1 ☐ C2

A.3 (1.2 pt)

$q_1 =$

$q_2 =$

Part B. Calibrating NTC thermistor (1.0 point)

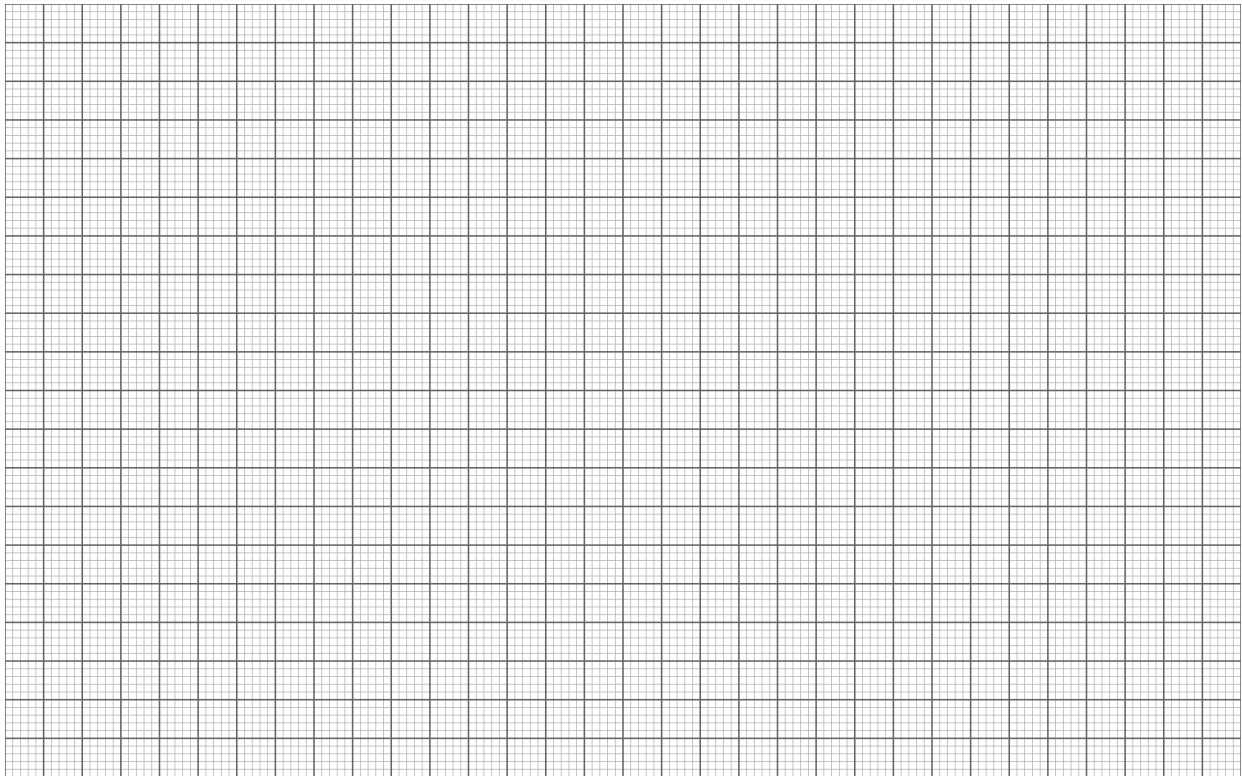
B.1 (1.0 pt)

Formula:

$R_0 =$

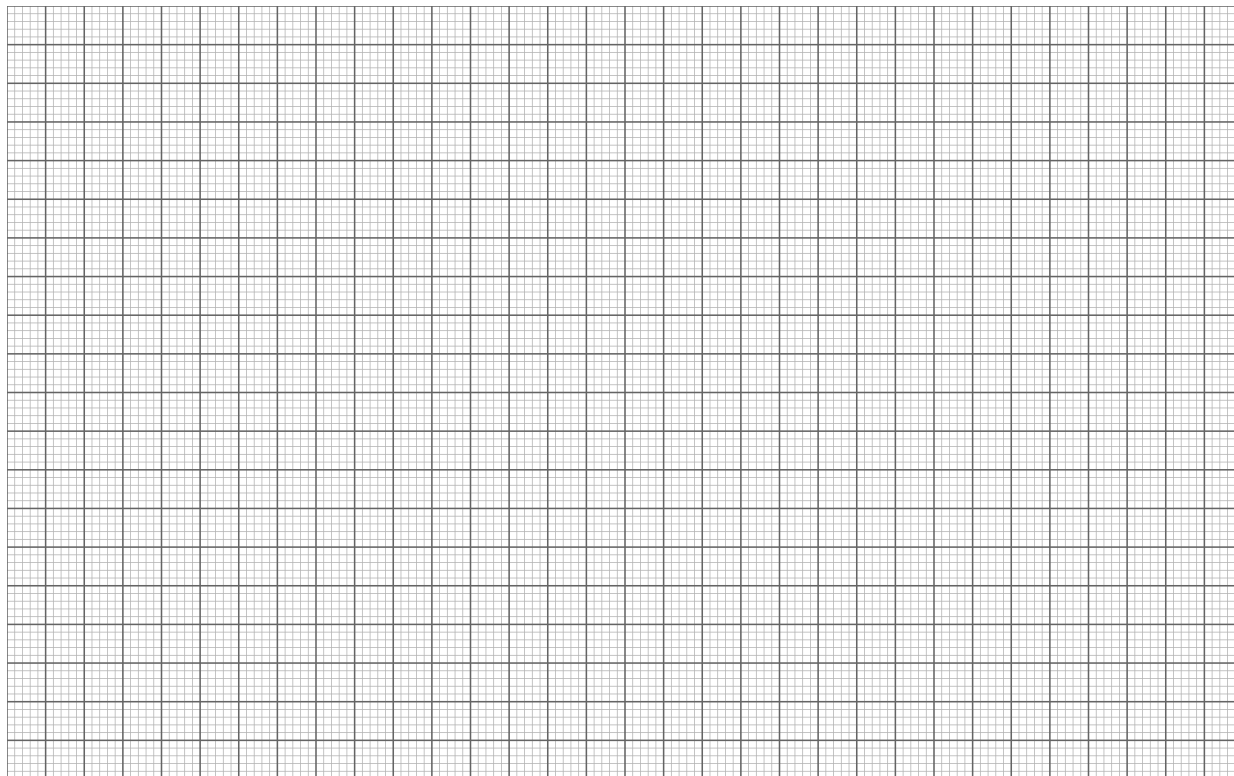
Value:

$R_0 =$ Ω

Part C. Capacitors at different temperatures (3.0 points)**C.1** (1.3 pt)Graph $C_1(U)$ and $C_2(U)$ on the millimeter paper:

C.2 (0.5 pt)

Graph $C_1(T)$ and $C_2(T)$ on the millimeter paper:

**C.3** (1.2 pt)

$$C_1(85^\circ\text{C})/C_1(40^\circ\text{C})|_{0\text{ V}} =$$

$$C_1(85^\circ\text{C})/C_1(40^\circ\text{C})|_{6\text{ V}} =$$

$$C_2(85^\circ\text{C})/C_2(40^\circ\text{C})|_{0\text{ V}} =$$

$$C_2(85^\circ\text{C})/C_2(40^\circ\text{C})|_{6\text{ V}} =$$

Part D. Sources of measurement errors (2.0 points)**D.1 (1.0 pt)**

Possible S1 positions: C1, C2

Possible IN connection: +9V, -9V, GND, Free

Initial settings:

S1 position	IN connection

Process:

Step number	S1 position	IN connection	Duration, s	Measured variable

Verification:

Main source of error (check):

- ☐ Leakage current
- ☐ Polarization properties of the capacitor's dielectric media

D.2 (1.0 pt)

Possible S1 positions: C1, C2

Possible IN connection: +9V, -9V, GND, Free

Initial settings:

S1 position	IN connection

Process:

Step number	S1 position	IN connection	Duration, s	Measured variable

Verification:

Main source of error (check):

- ☐ Leakage current
- ☐ Polarization properties of the capacitor's dielectric media