NAME, GROUP:

DATE:

working with:

RLC CIRCUIT

1. Resonance curve

Approximate resonant frequency: …… Hz

here U_{gen} = …….. V I = …… mA

Constant voltage U_{LRC} = …… V

f (Hz)	I (mA)

f (Hz)	I (mA)

I_{max} = …… mA

Resonant frequency: f_0 = …… Hz

$I_{max} / \sqrt{2}$ = …… mA

Frequencies where $I = I_{max} / \sqrt{2}$: f_1 = …… Hz f_2 = …… Hz

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2. Vector diagrams

f (Hz)	U_{LRC} (V)	I (mA)	U_{LR} (V)	I (mA)	U_c (V)	I (mA)
0.9 f_0 =						
f_0 =						
1.1 f_0 =						

RESULTS

1. Resonance curve

Resistance of the coil: R = ……

Quality factor: $Q = f_0 / (f_2 - f_1)$ = …….

2. Vector diagrams

Frequency: f = …….

Angular frequency: ω = …….

Capacitance of the capacitor: C = ……

Inductance of the coil: L = …….

From the Thomson's formula f_0 = ……

Quality factor $Q = \frac{1}{R}\sqrt{\frac{L}{C}}$ = …….