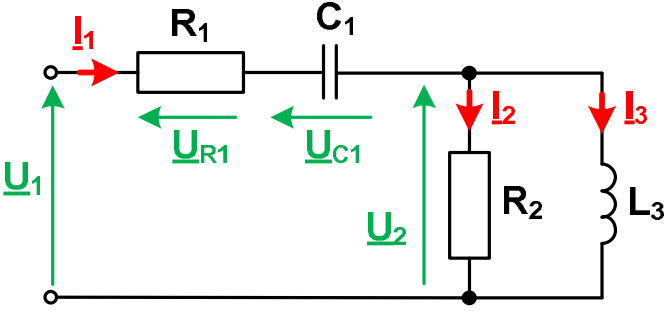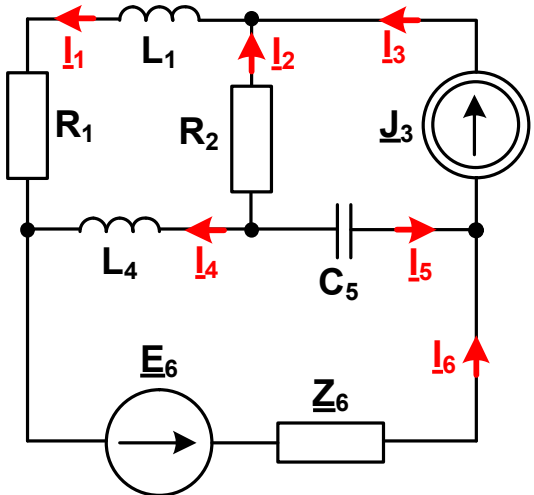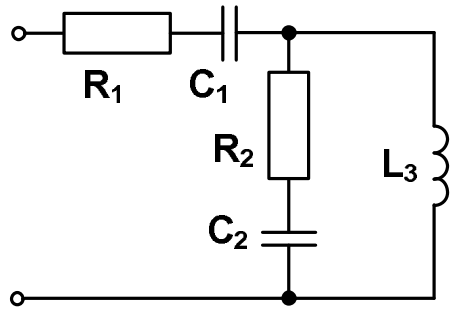# ELECTRICAL CIRCUITS 1 (IS-FEE-10070W) - TEST 2 (EXAMPLE)

PROBLEM TO BE SOLVED IN A GROUP	Points
1. Draw a **phasor diagram** for the circuit shown in the figure.	10
2. Determine the current I_6 using **Thevenin's Theorem**. Calculate the **active**, **reactive**, and **apparent power** for $\underline{Z}_6$. $\underline{J}_3 = j5$ A, $\underline{E}_6 = 50$ V, $R_1 = 10\ \Omega$, $X_{L1} = 5\ \Omega$, $R_2 = 15\ \Omega$, $X_{L4} = 20\ \Omega$, $X_{C5} = 5\ \Omega$, $\underline{Z}_6 = (10-j5)\ \Omega$	25

PROBLEMS TO BE SOLVED INDIVIDUALLY	Points
3. Calculate **the equivalent impedance** of the circuit shown in the figure. $\omega = 100$ rad/s, $R_1 = 10\ \Omega$, $R_2 = 5\ \Omega$, $L_3 = 200$ mH, $C_1 = 500\ \mu F$, $C_2 = 1$ mF	5
4. In the circuit from problem no 2, calculate **the currents** in all branches using **any method**.	20

Note: 31 points are required to pass the test.