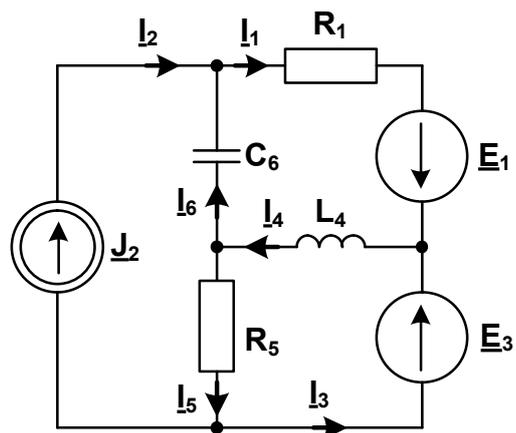


Module name: **Electrical Circuits 1**
 Module ID: **IS-FEE-10070W**
 Module type: **Class**
 Semester: **winter 2024/2025**
 Instructor: **Jarosław Forenc, j.forenc@pb.edu.pl**

Class 11 (13.01.2025)

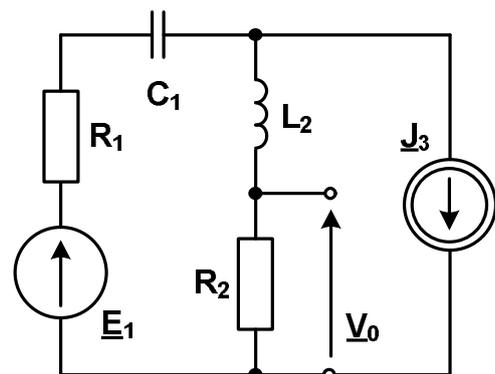
1. Calculate the currents in all branches of the circuit shown in the figure using **the Loop-Current Method**.

$R_1 = 20 \Omega$, $X_{L4} = 20 \Omega$, $R_5 = 10 \Omega$, $X_{C6} = 20 \Omega$,
 $\underline{E}_1 = j20 \text{ V}$, $\underline{E}_3 = 20 \text{ V}$, $\underline{J}_2 = 10 \text{ A}$,



2. Determine the voltage V_0 using **the Loop-Current Method**.

$R_1 = 2 \Omega$, $X_{C1} = 1 \Omega$, $X_{L2} = 2 \Omega$, $R_2 = 4 \Omega$,
 $\underline{E}_1 = 12 \text{ V}$, $\underline{J}_3 = 2 \text{ A}$.



3. Calculate the meter readings in the circuit shown below using **the Loop-Current Method**.

$e(t) = 100\sqrt{2}\sin(\omega t) \text{ V}$, $i(t) = 5\sqrt{2}\cos(\omega t) \text{ A}$, $R_1 = R_2 = R_3 = X_{L2} = X_{L3} = X_{L4} = X_{C2} = 10 \Omega$.

