Module name: **Electrical Circuits 2**
Module ID: **IS-FEE-10085S**
Module type: **Class**
Semester: **summer 2024/2025**
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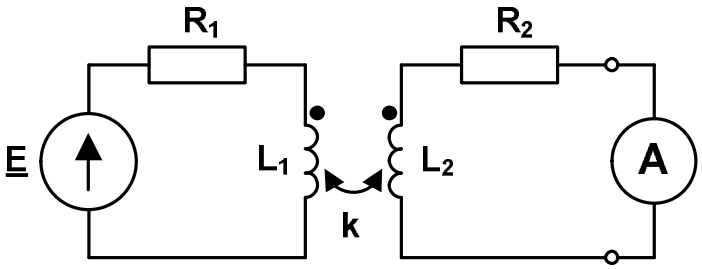
Class 4 (25.03.2025)

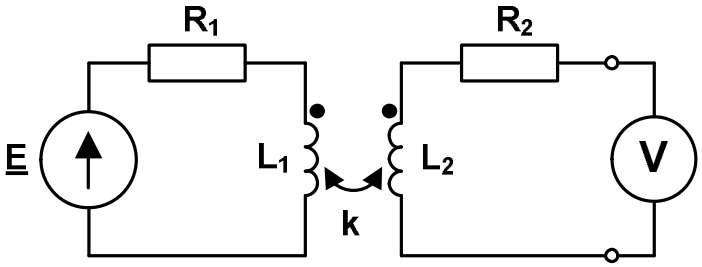
1. The air transformer was connected to the voltage source **E**. Calculate the **readings** of:
   a) **ammeter**, b) **voltmeter**,
   connected to the terminals of the secondary winding.

   E = 200 V, k = 0.8, $R_1 = R_2 = 20\ \Omega$, $X_{L1} = X_{L2} = 40\ \Omega$.

a)

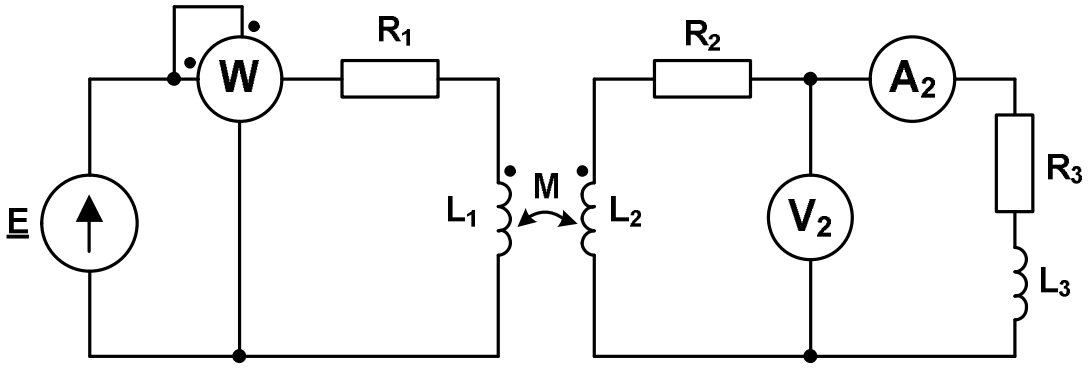


b)



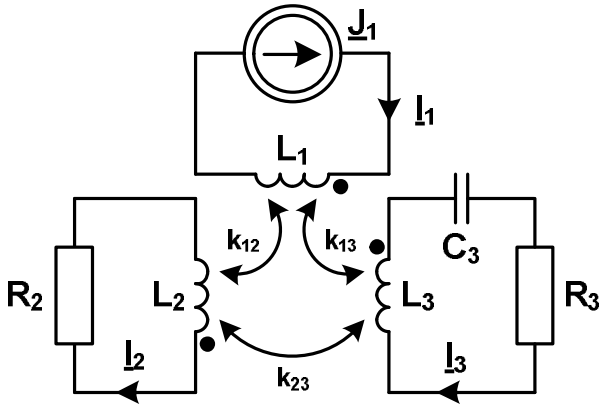
2. For the circuit below determine the results of measurements.

   E = 230 V, $R_1 = X_{L2} = X_M = 10\ \Omega$, $R_2 = 5\ \Omega$, $R_3 = X_{L1} = X_{L3} = 20\ \Omega$.



3. The maximum voltage across capacitor $\mathbf{C_3}$ must not exceed **75 V**. Check whether this condition is met in the circuit shown in the diagram.

$X_{L1} = 80\ \Omega$, $R_2 = 10\ \Omega$, $X_{L2} = 20\ \Omega$, $R_3 = 10\ \Omega$, $X_{L3} = 20\ \Omega$, $X_{C3} = 10\ \Omega$,
$k_{12} = 0.5$, $k_{13} = 0.75$, $k_{23} = 0.5$, $\underline{J}_1 = 3$ A



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