EE240 Circuits I
Quiz 03 - Section 2
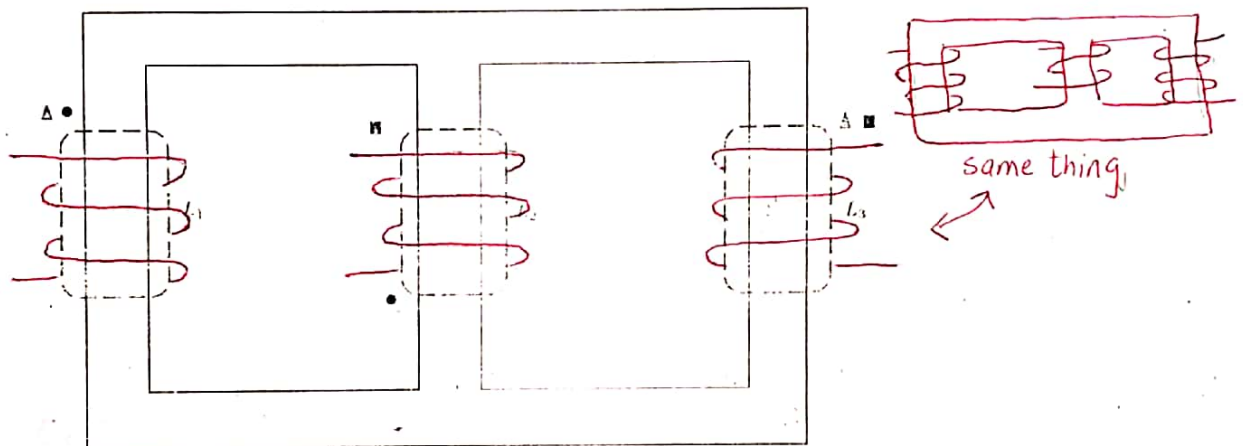
Name: _____SOLUTION_____

Campus ID: _____

Total Marks: 10
Time Duration: 15 minutes

Question 1 (6 marks)

Three mutually coupled inductors L_1, L_2 and L_3 with the polarity shown by dot pairs are to be winded on the core on the positions indicated on the diagram given below. Draw these windings on the core maintaining the desired sense of coupling.

OR

same thing

Question 2 (4 marks)

Formulate the network equations for the following circuit using the Kirchhoff current law.

$$① : \frac{V_1 - V_0}{R_1} + C_1 \frac{dV_1}{dt} + \frac{V_1 - V_2}{R_3} = 0$$

$$② : \frac{V_2 - V_1}{R_3} + \frac{1}{L_1}\int (V_2 - V_3)dt + \frac{V_2}{R_2} = 0$$

$$③ : C_2 \frac{dV_3}{dt} + \frac{1}{L_1}\int (V_3 - V_2)dt = 0$$