PHY 112 - Section-04 ID: 19101077

SGA -01

a) Here,

$R_1 = 2200\ \Omega$

$R_2 = 1100\ \Omega$

$R_3 = 4400\ \Omega$

$R_4 = 2200\ \Omega$

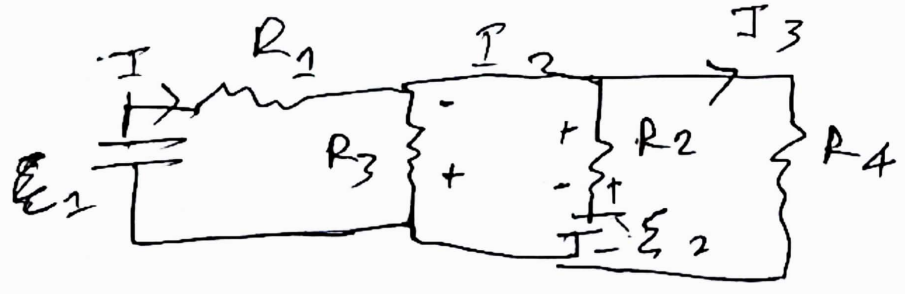
$\mathcal{E}_1 = 3\ V, \quad \mathcal{E}_2 = 7\ V$

Using KVL in Loop 1

$$-\mathcal{E}_1 - I_1 R_1 - (I_1 - I_2) R_3 = 0$$

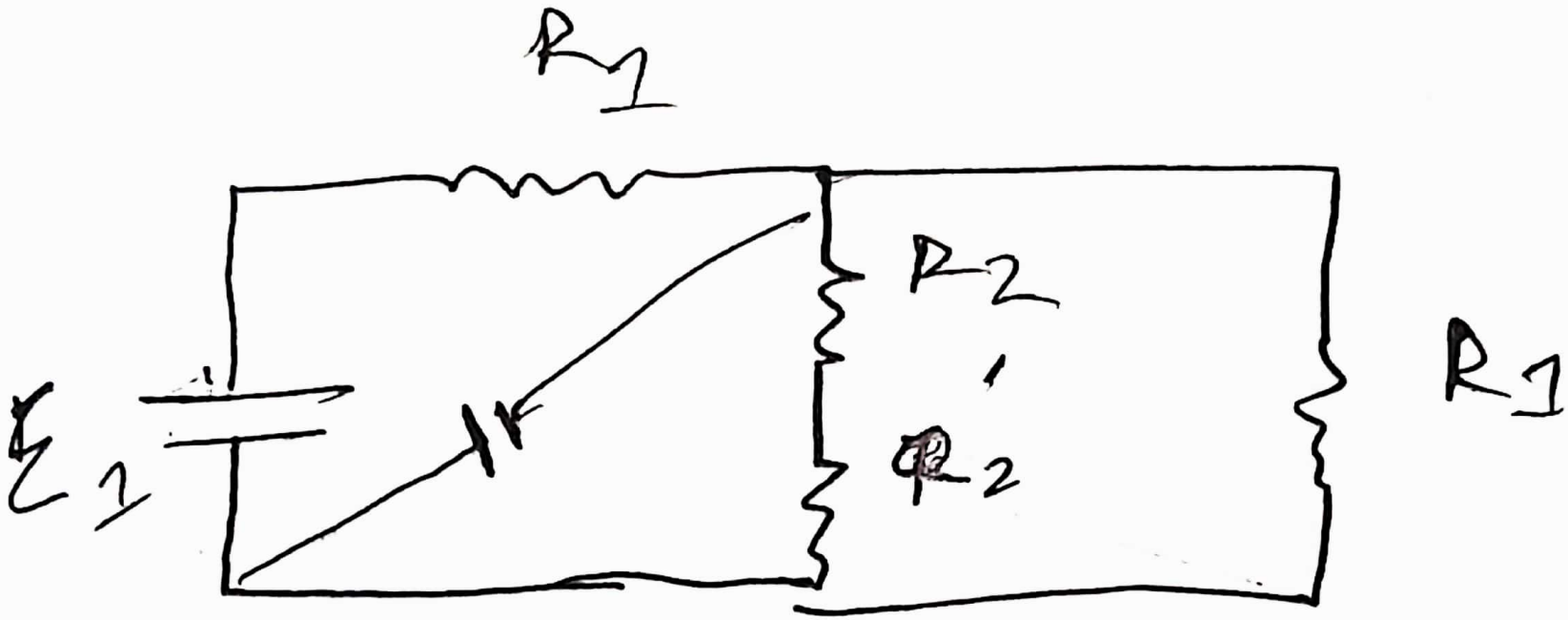
$$\Rightarrow \mathcal{E}_1 - I_1 R_1 - I_1 R_3 + I_2 R_3 = 0$$

$$\Rightarrow 3 - 2200 I_1 - 4400 I_1 + 1100 I_2 = 0 \quad \ldots (i)$$



$$-I_2 R_3 + I_1 R_2 - R_2 I_2 - \mathcal{E}_2 = 0$$

c) ..



Here, R_2' and C are