

Prova B dell'esame a distanza di ELETTRONICA del 2-4-2021

Calcolare la tensione  $v_2(t)$  per  $t > 0$ , nell'ipotesi che il circuito di figura 1 sia a regime al tempo  $t=0$  in cui l'interruttore K si apre.

$$R_0 = 1 \, \Omega, \quad R_1 = 5 \, \Omega, \quad R_2 = 2 \, \Omega, \quad C = \frac{1}{5} \, \text{F}, \quad L = \frac{1}{3} \, \text{H}, \quad g_m = \frac{7}{10} \, \text{S}, \quad i_0(t) = 120 \cos(\omega t) \, \text{A},$$

STANDARD:  $R_3 = 0 \, \Omega, \quad \omega = 3 \, \text{rad/s}$ .

$$\left\{ \begin{aligned} v_2(t) &= \frac{1128}{37} e^{-6t} - \frac{59040}{1073} e^{-\frac{15}{2}t} - \frac{2016}{29} \cos(3t) - \frac{528}{29} \sin(3t) \, \text{V} \\ v_c(t) &= \frac{1880}{37} e^{-6t} - \frac{49200}{1073} e^{-\frac{15}{2}t} + \frac{640}{29} \cos(3t) + \frac{720}{29} \sin(3t) \, \text{V} \end{aligned} \right.$$

LIGHT:  $G_3 = 1/R_3 = 0 \, \text{S}, \quad \omega = 0 \, \text{rad/s}$ .  $\langle v_2(t) = -30.86e^{-10t} - 72 \, \text{V} \rangle$

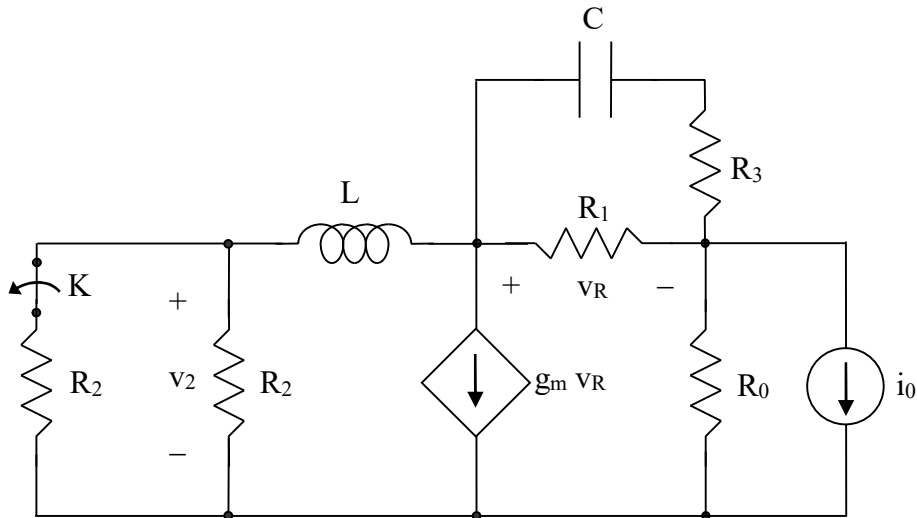


fig. 1