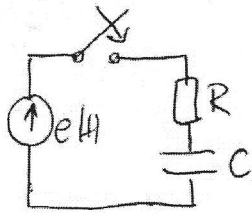
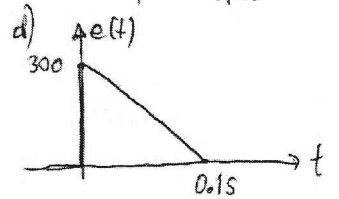
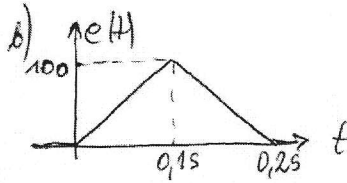
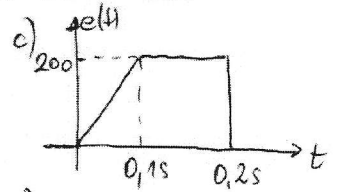
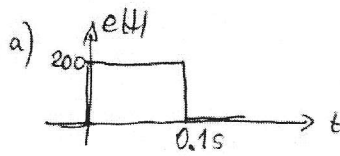


Circuits and systems II Tutorials No 6

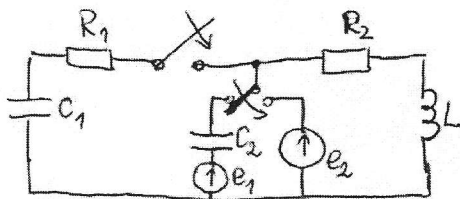
1. Calculate $u_C(t)$ in transient state in the circuit at pulse excitation



$R = 100\Omega, C = 1000\mu F$



2. Determine $u_{C_1}(t)$ and $i_L(t)$ in transient, if W_1 was switched over at $t_0 = 0$, and W_2 at $t_1 = 0.4s$



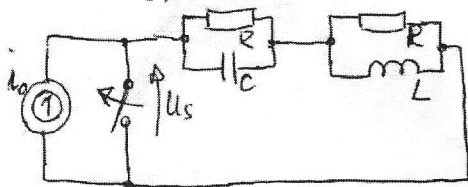
$e_1(t) = 20\sqrt{2} \sin(t + 45^\circ)$

$e_2(t) = 20V$

$R_1 = 1\Omega, R_2 = 5\Omega, L = 2H, C_1 = 1F, C_2 = 0.5F$

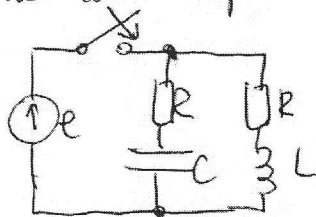
3. Calculate R, L & C in the circuit to get the transient voltage $u_s(t)$ on the switch after opening it in the form

$u_s(t) = 100 - 100e^{-10t} + 100e^{-50t}$



$i_0(t) = 1A$

4. The current $i(t)$ after turning on the switch is constant. Determine its value and capacitance C .



$e(t) = 220V$

$R = 20\Omega$

$L = 0.1H$