

# Elektronik för D, Hambley

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## Svar kapitel 4<sup>1</sup>

**P4.3**  $t_2 = -0.5\ln(0.5)RC \approx 69.3$  ms.

**P4.4**  $v_C(t) = 10 - 15e^{-t/RC}$

$$t_0 = -\ln(10/15)RC \approx 0.81 \text{ ms.}$$

**P4.6**  $v(t) = V_1 e^{-(t-t_1)/RC}, t \geq t_1$

**P4.10**  $v(t) = V_1 e^{-(t-t_1)/RC}, t \geq t_1$

**P4.22** Steady state:  $v_C = 10$  V.

$$t = -\ln(0.01)RC \approx 9.21 \text{ ms.}$$

**P4.23**  $v_R(t) = 0, t < 0,$

$$v_R(t) = 10e^{-t/RC}, t > 0.$$

**P4.33**  $i(t) = 1 - e^{-2tR/L} = 1 - e^{-20t}, t \geq 0,$

$$i(t) = 0, t < 0.$$

**P4.34**  $i_L = 0.3 - 0.5e^{-tR/L}, t \geq 0.$

$$v = 0.5Re^{-tR/L}, t \geq 0.$$

**P4.45**  $i(t) = -e^{-t} + e^t R/L, t \geq 0.$

**P4.46**  $v_c = 10^6 e^{-t} - 10^6 e^{-3t}$

**P4.47**  $v(t) = 25e^{-tR/L} + 25 \cos(10t) - 25 \sin(10t), t \geq 0.$

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<sup>1</sup>Med reservation för eventuella tryckfel