

פתרון שאלות הבגרות

באלקטרוניקה תקבילית

לפי נושאים

משנת 2012 עד 2000

הכנת המורה

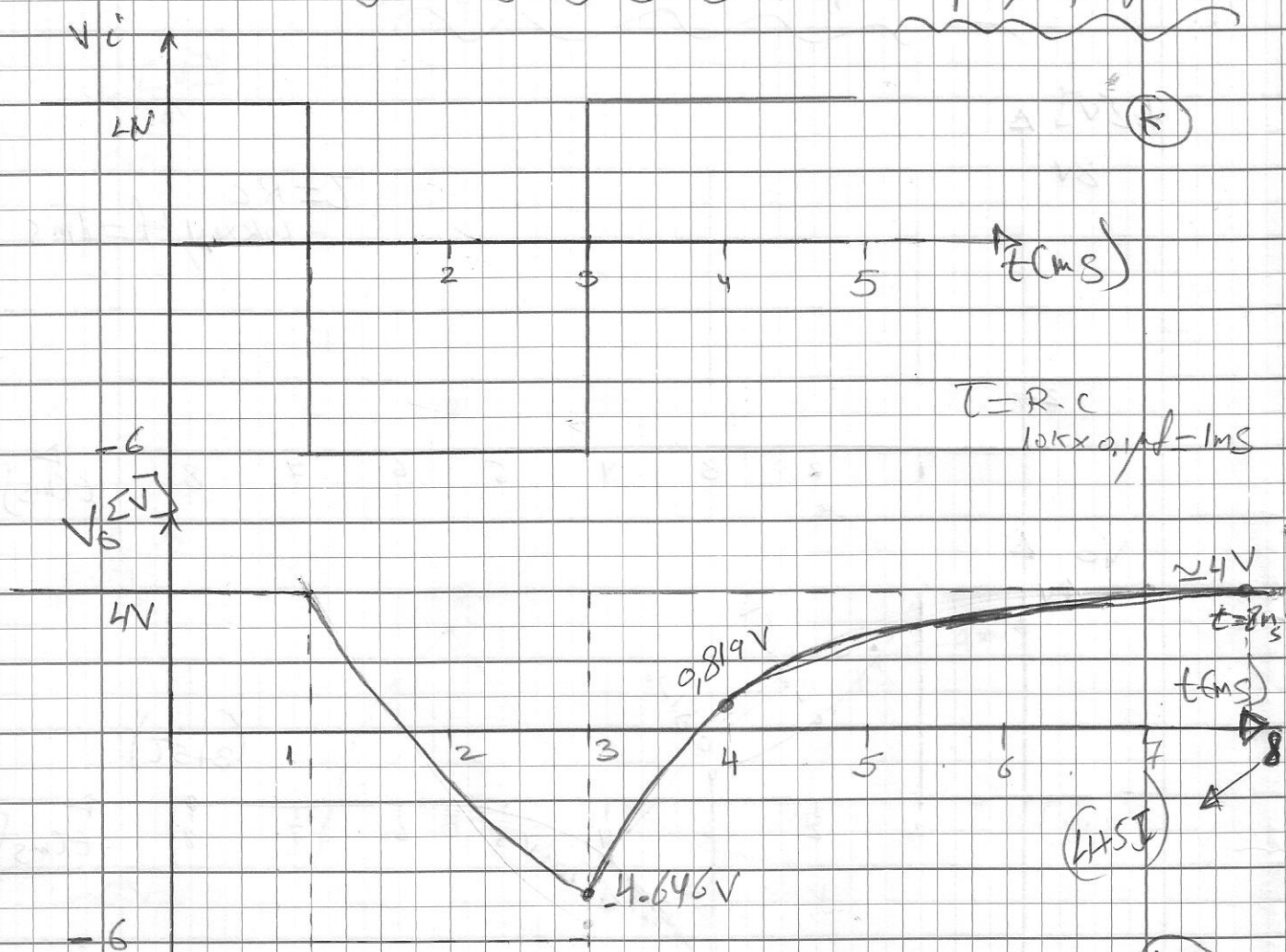
ותד עבד אלטיף

פתרון שאלות מסננים

HP , LP

2 ON $\sqrt{f_{ce}}$ 2012 11520

LP, HP $\sqrt{f_{ce}}$



$$T = R \cdot C$$

10k $\times$ 0.1 μ F = 1ms

$t = 3$ ms $\sqrt{f_{ce}}$ V_0

$$V_0 = 4V \quad V_{\infty} = -6V \quad V_0(t=3ms) = ?$$

$$\Delta t = 3 - 1 = 2ms \quad T = 1ms$$

$$V_0(t=3ms) = V_{\infty} - (V_{\infty} - V_0) e^{-\Delta t / T}$$

$$= -6 - (-6 - 4) e^{-2/1}$$

$$= \boxed{-4.646V}$$

$t = 4$ ms $\sqrt{f_{ce}}$ (22)

$$V_0 = -4.646V_{\infty} = 4$$

$$\Delta t = 4 - 3 = 1ms$$

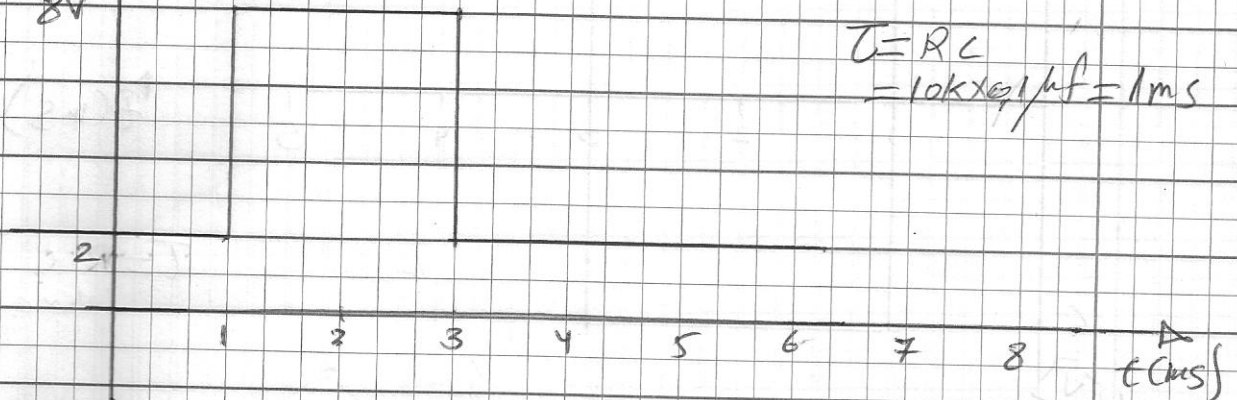
$$V_0(t=4ms) = 4 - (4 + 4.646) e^{-1/1}$$

$$= 0.819V$$

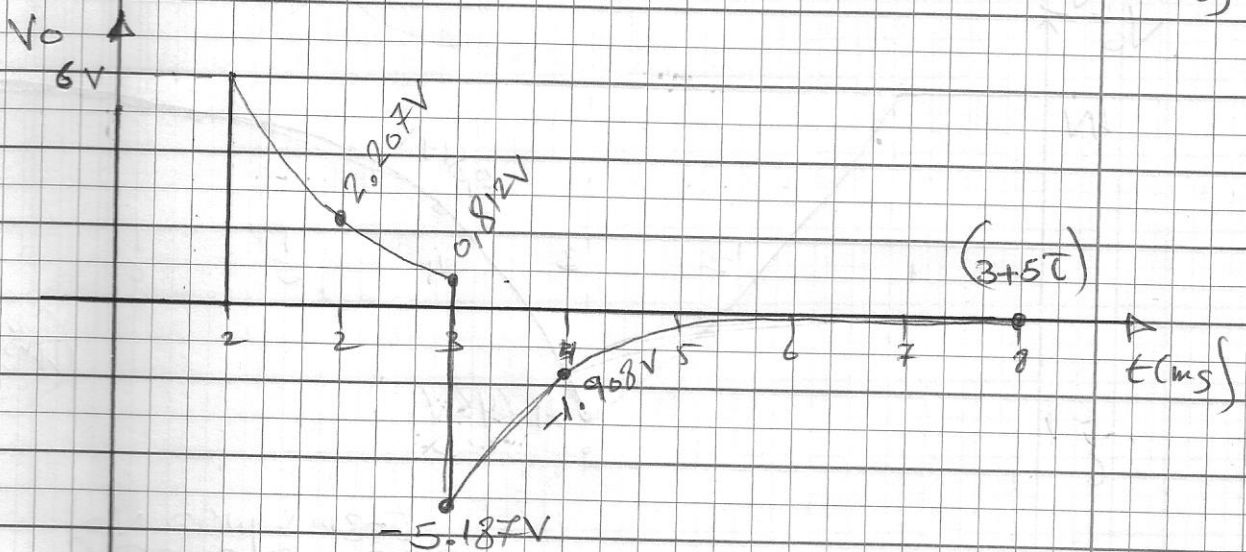
Hand-drawn graph of voltage V_c over time t . The graph shows a step function for V_c and a corresponding exponential decay curve for V_c . The y-axis is labeled V_c and has values 4V, -6, and -6. The x-axis is labeled t (ms) and has values 1, 2, 3, 4, 5, 6, 7, 8. A vertical dashed line is drawn at $t=3$ ms. The curve starts at 4V at $t=0$, decays to -4.646V at $t=3$ ms, and then rises back towards 4V. A point on the curve is labeled 0.819V at $t=4$ ms. The final value is labeled ≈ 4 V at $t=8$ ms. A circled 'K' is in the top right corner.

2 ON : fco 2011 01/07/20

$V_i (V)$
8V



$$\tau = RC = 10k\Omega \times 1\mu F = 1ms$$



$t = 2ms$ NSD K3IN DAN (D)

$$V_o(t=6V) \quad V_o=0 \quad \Delta t = 2-1=1ms$$

$$V_o(t=2ms) = 0 - (0-6)e^{-\frac{1ms}{1ms}} = 6e^{-1} = \boxed{2.207V}$$

NSD K3IN DAN

$$t = 4ms$$

$$V_o(t=-5.187V)$$

$$V_o=0V$$

$$\Delta t = 4-3=1ms$$

$$V_o(t=4ms) = -5.187e^{-1} = \boxed{-1.908V}$$

$t = 3ms$ NSD K3IN DAN (E)

$$V_o(t=6V) \quad V_o=0 \quad \Delta t = 3-1=2ms$$

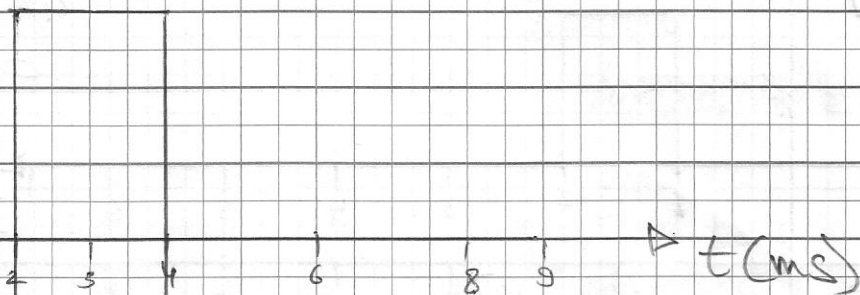
$$V_o(t=3ms) = 6e^{-2} = \boxed{0.812V}$$

$$t = 3ms \quad NSD \quad K3IN \quad DAN$$

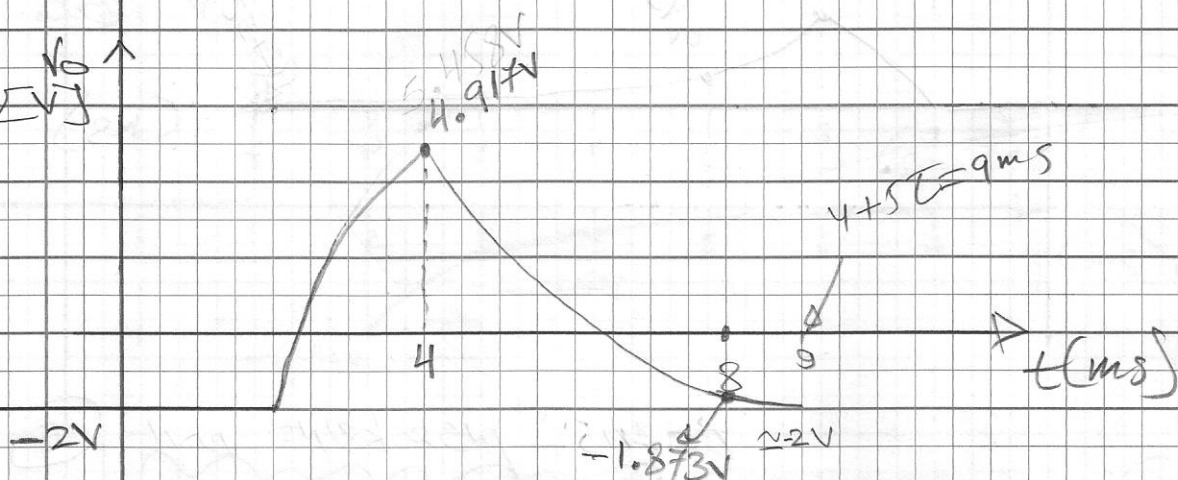
$$t = 4ms = 0.812 - 6V = -5.187V$$

2.6W after 2009 1/1/20

$V_e [V]$
6V



$V_o [V]$



$t=4ms$ N/A K31A DAN (2)

$$V_o(t=4ms) = -2V \quad V_{\infty} = 6V \quad \Delta t = 4-2 = 2ms$$

$$\tau = R \cdot C = 1k \times 1\mu f = 1ms$$

$$V_o(t=4ms) = 6 - (6+2)e^{-\frac{2ms}{1ms}} = \boxed{4.917V}$$

$t=8ms$ N/A K31A DAN (3)

$$V_o(t=8ms) = 4.917V \quad V_{\infty} = -2V \quad \Delta t = 8-4 = 4ms$$

$$V_o(t=8ms) = -2 - (-2-4.917)e^{-\frac{4ms}{1ms}} = \boxed{-1.873V}$$

f. G. k. 3/28 3/1 - 27 3/202

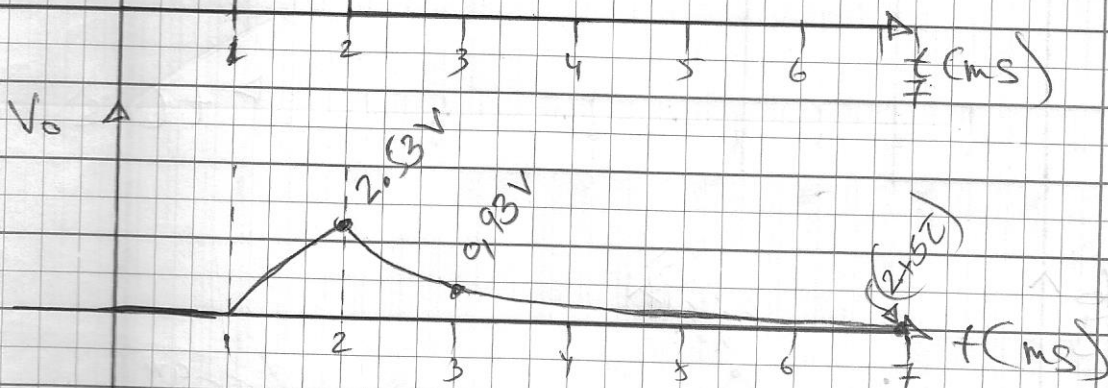
2 ON אלקי 2008 מרש

V_i
4V



$$\tau = R \cdot C$$

$$= 10k \cdot 0.1 \mu f = 1ms$$



$t = 2ms$ נשא קצין דמנ (2)

$$V_o = 0V \quad V_{\infty} = 4V \quad \Delta t = 2 - 1 = 1ms$$

$$V_o(t=2ms) = 4 - (4 - 0)e^{-\frac{1ms}{1ms}} = \boxed{2.528V}$$

$t = 3ms$ נשא קצין דמנ (3)

$$V_o = 2.528V \quad V_{\infty} = 0 \quad \Delta t = 3 - 2 = 1ms$$

$$V_o(t=3ms) = 0 - (0 - 2.528)e^{-\frac{1ms}{1ms}} = \boxed{0.93V}$$

הגדל 328 311 - 27 320

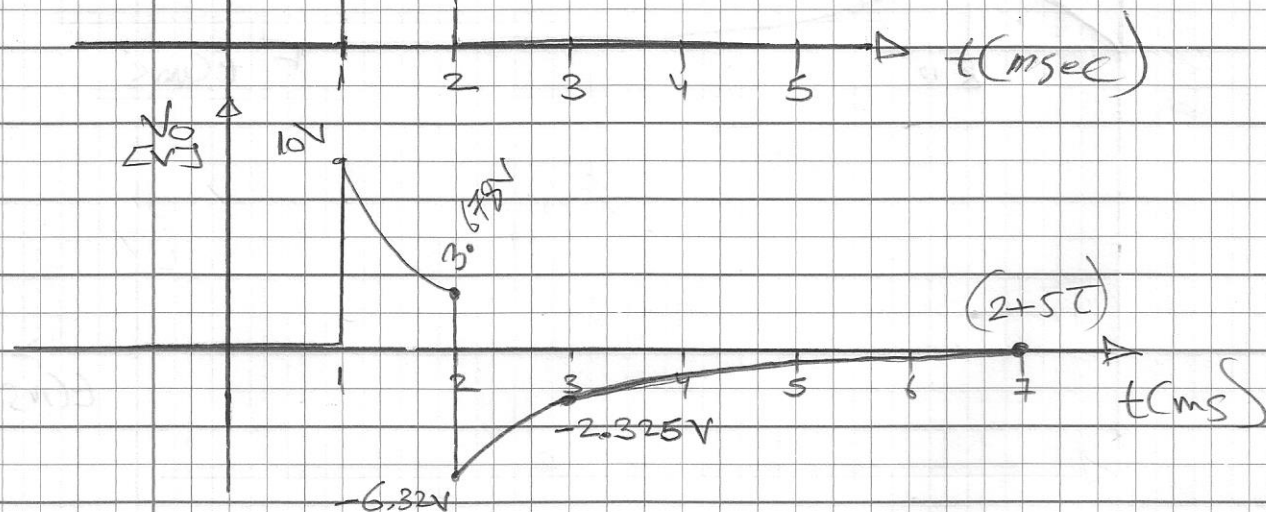
5 ON 100 200T 11-22

$V_C (V)$

10V

$$T = R \cdot C$$

$$10K \times 0.1 \mu f = 1ms$$



$t = 2ms$ INSD K31ND DAN (2)

$$V_0^+ = 10V \quad V_0 = 0 \quad \Delta t = 2 - 1 = 1ms$$

$$V_0(t = 2ms) = 10V e^{-\frac{1ms}{1ms}} = \boxed{3.678V}$$

$t = 2ms$ INSD K31ND DAN

-10V 12/22 1.1/10 13/22 0.1

$$V_0(t = 2ms) = 3.678 - 10 = \boxed{-6.321V}$$

$t = 3ms$ INSD K31ND DAN

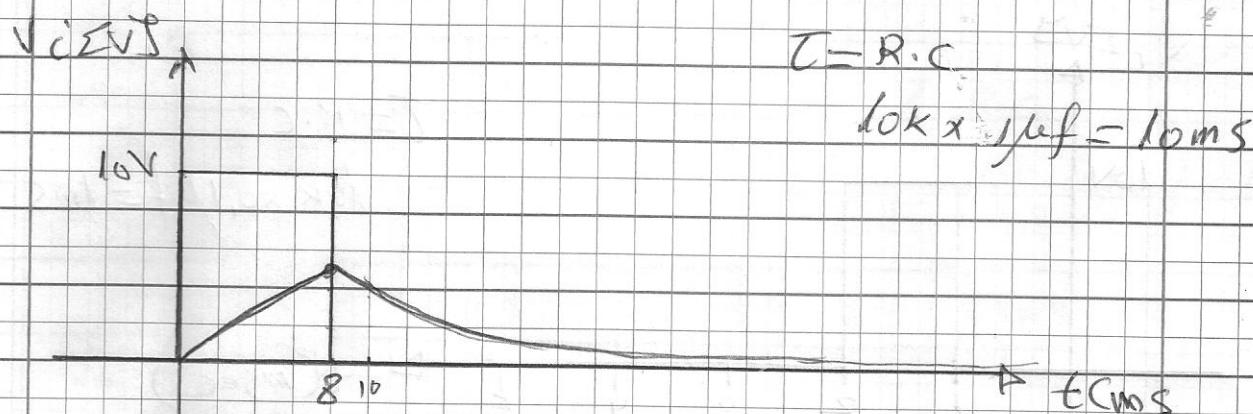
$$V_0^+ = -6.321V \quad V_0 = 0 \quad \Delta t = 3 - 2 = 1ms$$

$$V_0(t = 3ms) = -6.321 e^{-\frac{1ms}{1ms}}$$

$$= \boxed{-2.325V}$$

1.1/10 13/22 0.1

360 = 160 2006. 1/1/2007



2) נתון $t = 8 \text{ ms}$ נחשב את המרחק x שבו נמצא החלקיק.

$$V_0 = 10 \text{ V} \quad V_0 = 10 \text{ V} \quad t = 8 - 0 = 8 \text{ ms}$$
$$V_0(t = 8 \text{ ms}) = 10 - (10 - 0) e^{-\frac{8 \text{ ms}}{10 \text{ ms}}}$$
$$= \boxed{5.506 \text{ V}}$$

$t = 10 \text{ ms}$ | $N \leq 2$ | $3 \leq N$ | $N \geq 3$ | $N \geq 3$ | (∞)

$$V_{ot} = 5.506 \text{ V} \quad V_{\infty} = 0 \text{ V} \quad \Delta t = 10 - 8 = 2 \text{ ms}$$
$$V_o(t = 10 \text{ ms}) = 5.506 e^{-\frac{2 \text{ ms}}{10 \text{ ms}}}$$
$$= \boxed{4.568 \text{ V}}$$

הרבה - 1/2 - 3/4 א"ג