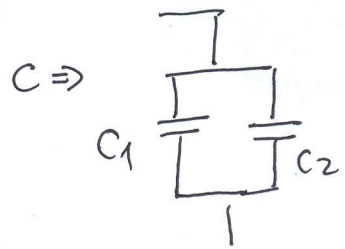


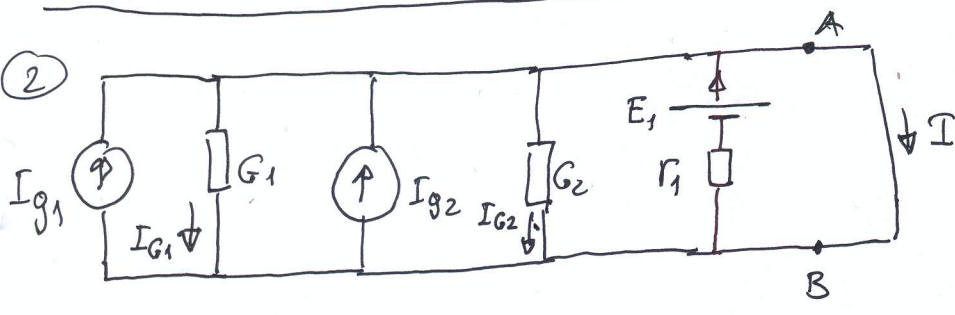
10

1



$C \Rightarrow C_1 = \epsilon_1 \frac{S}{2d} \quad C_2 = \epsilon_2 \frac{S}{2d} \quad C = C_1 + C_2 = \frac{S}{2d} (\epsilon_1 + \epsilon_2)$

2

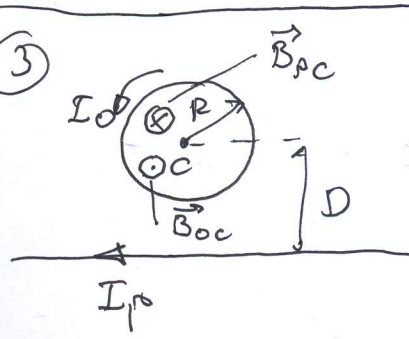


$V_{AB} = 0 !!$

$I_{G1} = G_1 V_{AB} = G_2 V_{AB} = I_{G2} = 0$   
 $I = I_{g1} + I_{g2} + \frac{E_1}{r_1}$

20

3



$\vec{B}_c = \vec{B}_{pc} + \vec{B}_{oc} = 0 \Rightarrow \frac{M_0 I_p}{2\pi D} = \frac{M_0 I_0}{2R} \Rightarrow I_0 = I_p \frac{R}{\pi D}$

Смер  $I_0$  је наилазит на слику

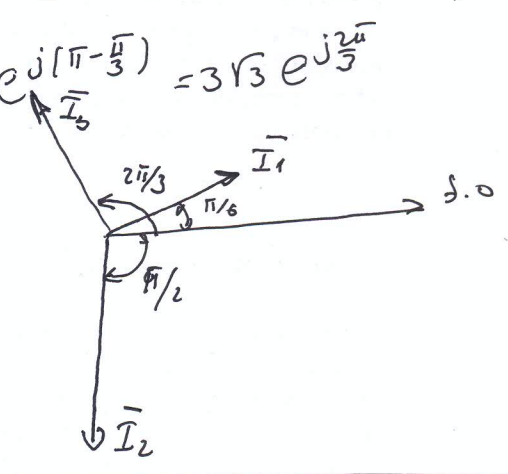
20

4

$i_3(t) = -i_1(t) - i_2(t) \quad \bar{I}_3 = -\bar{I}_1 - \bar{I}_2 = -\frac{3\sqrt{3}}{2} + j\frac{9}{2} - 3\sqrt{3}(\frac{1}{2} - j\frac{\sqrt{3}}{2}) =$   
 $= -3\sqrt{3} [\cos\frac{\pi}{3} - j\sin\frac{\pi}{3}] = -3\sqrt{3} e^{-j\frac{\pi}{3}} = 3\sqrt{3} e^{j(\pi - \frac{\pi}{3})} = 3\sqrt{3} e^{j\frac{2\pi}{3}}$

$i_3(t) = \sqrt{6} \cdot 3 \sin(100\pi t + \frac{2\pi}{3})$

$\bar{I}_1 = 3 e^{j\frac{\pi}{6}}; \bar{I}_2 = 6 e^{-j\frac{\pi}{2}}; \bar{I}_3 = 3\sqrt{3} e^{j\frac{2\pi}{3}}$



25

5  $W_0 = \frac{Q_0^2}{2C}$   $Q_0$  макс. електрични полнеж у конденз. кондензатор

$W(t) = \frac{(q(t))^2}{2C} \quad q(t) = Q_0 e^{-\frac{t}{\tau}}$

$W(t_1) = \frac{Q_0^2 e^{-2\frac{t_1}{\tau}}}{2C} = \frac{1}{e^2} \frac{Q_0^2}{2C} \Rightarrow e^{-2\frac{t_1}{\tau}} = e^{-2} \Rightarrow \frac{t_1}{\tau} = 1 \quad t_1 = \tau$

$t_1 = RC = 10^3 \cdot 10^{-6} = 10^{-3} s = 1ms$

25