

24 FEBBRAIO 2011

1) $Q_{c1} = C_1 V$ $Q = 60 \times 10^{-6} \times 200 V = 0,012 = 1,2 \times 10^{-2}$

b) $C_{eq} = C_3, C_4 = 60 + 60 = 120 \mu F$

$C_{eq} = \frac{1}{120} + \frac{1}{120} = 60 \mu F$

$C_{eq} = 60 \mu F$ $Q_{eq} = 60 \times 10^{-6} \times 200 V = 1,2 \times 10^{-2}$

$Q_{eq} = 1,2 \times 10^{-2} =$

DIFF. D. p. $C_2 = \frac{1,2 \times 10^{-2}}{C_2} = \frac{1,2 \times 10^{-2}}{120} = 100 V$ su C_2

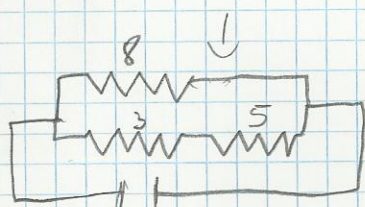
ENERGIA immagazzinata da $C_2 =$

$U = \frac{1}{2} QV$ $U = \frac{1}{2} \times 1,2 \times 10^{-2} \times 1 \cdot 10^2 = 0,6 J$

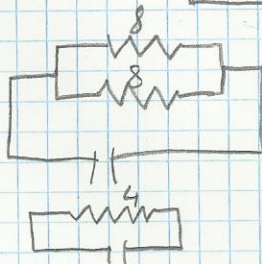
$U = \frac{1}{2} CV^2$

2) $R_{eq} = \frac{1}{\frac{1}{6} + \frac{1}{12}} = \frac{2+1}{12} = \frac{3}{12} = 4 \Omega$

$R_{eq} = 4 + 4 = 8 \Omega$



$R_{eq} = 3 + 5 = 8 \rightarrow$



$R_{eq} = \frac{1}{\frac{1}{8} + \frac{1}{8}} = 4$

$P = \frac{V^2}{R} \rightarrow \frac{144}{4} = 36 W$

$V_{Rep} = \frac{E \cdot R_{eq}}{R_{eq} + 4 \Omega}$ 12,6

b) DDP 12 Ω

6, 12 paralleli quindi stessa DDP.

3, 5 paralleli con 12,6 e 4 quindi stessa DDP.

DDP 12 $\rightarrow \frac{E \cdot R_{eq 6,12}}{R_{eq 6,12} + 4 \Omega} = \frac{12 \cdot 4}{4 + 4} = 6 V$

DDP 3 $\frac{12 \cdot 3}{8} = 4,5 V$
 $P = \frac{4,5^2}{3} = 6,75 W$

3 $\Phi = 5.0 \text{ TmWb},$

$$\langle \mathcal{E} \rangle = \frac{\Delta \Phi_B}{\Delta t} - N \quad \text{con } N=1 \text{ (solo 1 spira)}$$

$$\langle \mathcal{E} \rangle = \frac{\Phi_{BF} - \Phi_{Bi}}{\Delta t}$$

↓
 $t_F - t_i$

Considero il Tempo iniziale $T=0$
 $t_i=0$

$$\Phi_{Bi}=0 \quad \frac{\Phi_{BF}}{t_F} = \frac{5.0 \text{ T} \times 10^{-3}}{1 \text{ T}} = 5.0 \times 10^{-3} \text{ V}$$

$$P_{OT} = \frac{V^2}{R} = \frac{(5.0 \times 10^{-3})^2}{10^{-4}} = 25.0 \times 10^{-2} \text{ W}$$

Con il flusso in aumento il $\Delta \Phi_B$ è posit. fivo quindi rispettando la formula viene una corrente negativa che gira nella spira in senso antiorario.