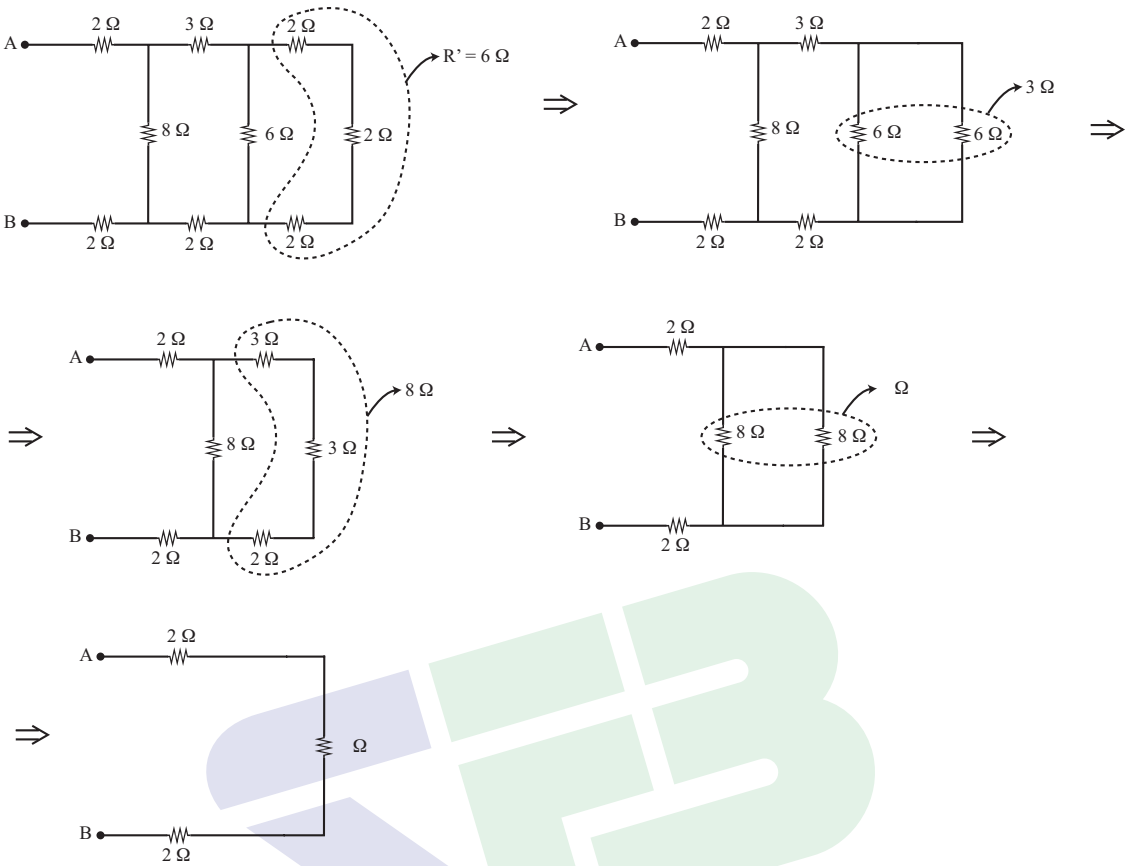
FÍSICA II
AULA 14:
ASSOCIAÇÃO DE RESISTORES
EXERCÍCIOS DE FIXAÇÃO

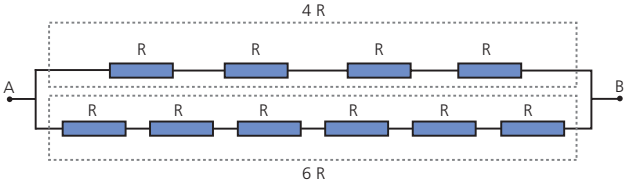
01.



Req = 2 + 4 + 2
Req = 8 Ω

Resposta: C

02. Dados: R = 20 Ω; U = 120 V.
O arranjo dado equivale ao esquema abaixo:



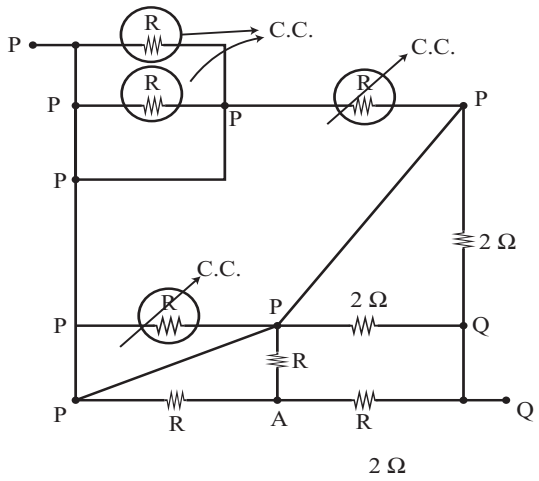
A resistência equivalente é:

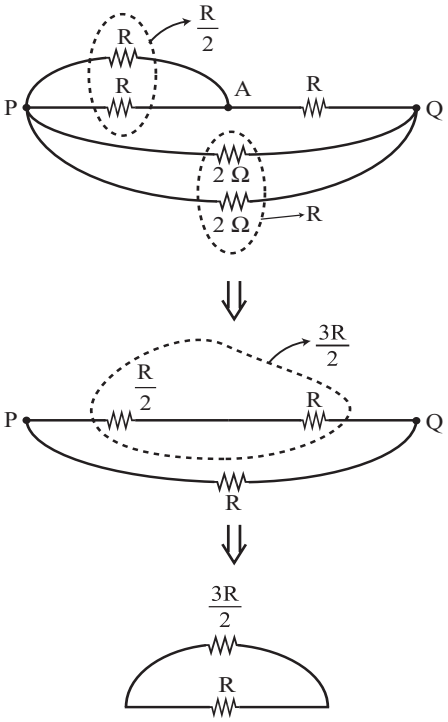
$$R_{eq} = \frac{6\,R \cdot 4\,R}{6\,R + 4\,R} = \frac{24\,R^2}{10\,R} \Rightarrow R_{eq} = 2,4\,R = 2,4 \cdot 20 \Rightarrow$$

$$\boxed{R_{eq} = 48\ \Omega}$$

Resposta: E

03.



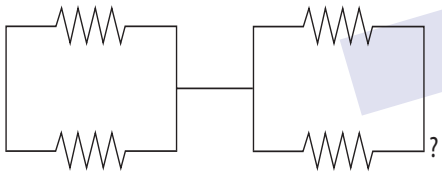


$$Req = \frac{\frac{3R}{2}\cdot R}{\frac{3R}{2}+R} = \frac{\frac{3R^{\not 2}}{\not 2}}{\frac{5R}{\not 2}}$$

$$Req = \frac{3R}{5} \Rightarrow Req = \frac{3\cdot 5}{5} \Rightarrow \boxed{Req = 3\ \Omega}$$

Resposta: C

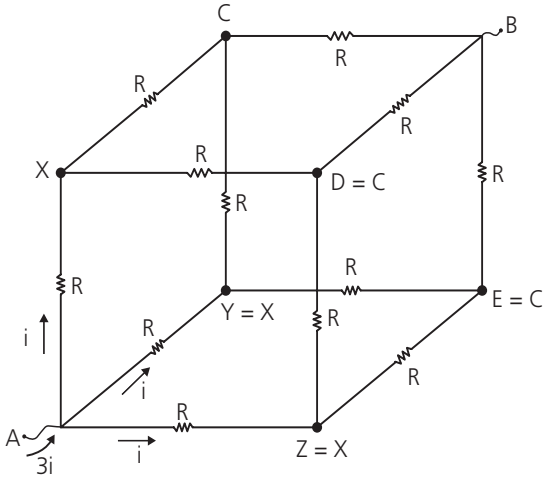
04. Para a associação abaixo:



$$R_{eq} = \frac{R}{2}+\frac{R}{2} = \frac{2R}{2} \Rightarrow \boxed{R_{eq} = R}$$

Resposta: D

05.



Supondo que uma corrente de 3i entre no ponto A, temos:

$V_A - V_Z = R \cdot i$

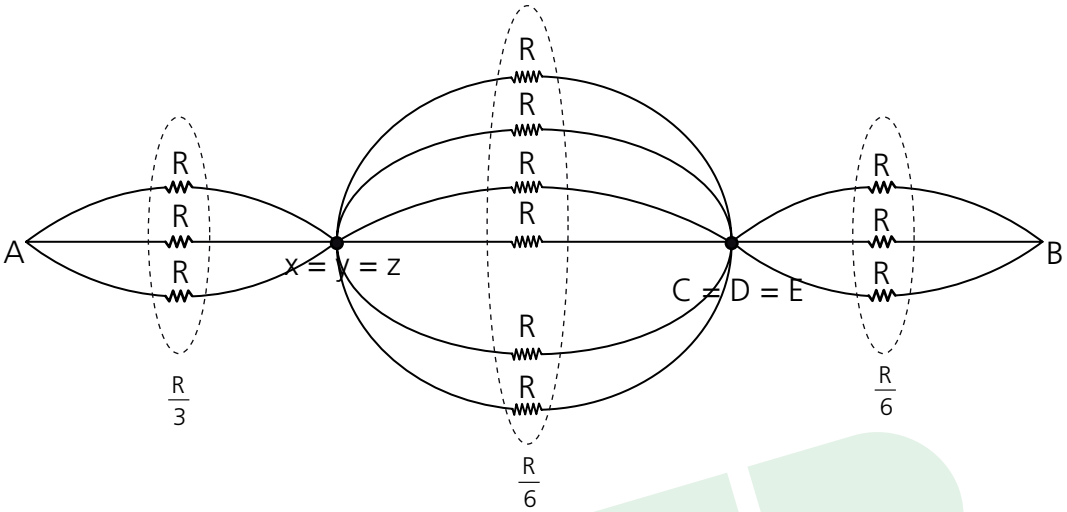
$V_A - V_Y = R \cdot i$

$V_A - V_X = R \cdot i$

Logo: $V_A - V_Z = V_A - V_Y = V_A - V_X \Rightarrow V_Z = V_Y = V_X$

Por Analogia:

$V_C = V_D = V_E$



$$Req = \frac{R}{3} + \frac{R}{6} + \frac{R}{3}$$

$$Req = \frac{5R}{6} \Rightarrow Req = \frac{5 \cdot 6}{6} \Rightarrow \boxed{Req = 5\ \Omega}$$

Resposta: B