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2.7.10

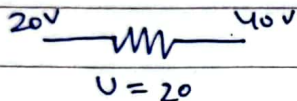
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$$21.6 \cdot 10^3 = p \cdot 5400 \quad p = 4 \text{ W}$$

$$P = \frac{V^2}{R} \quad R = \frac{V^2}{P} \quad R = \frac{20^2}{4} = 100 \Omega$$

$$I = \frac{V}{R} \quad V = 20V \quad R = 100\Omega$$

$$I = \frac{20}{100} = 0.2A$$



$$V = 20 \text{ V}$$

$$p = 200 \text{ W}$$

$$P = \frac{U^2}{R} \quad R = \frac{U^2}{P} \quad R = \frac{20^2}{200} = 2 \Omega$$

$$I = \frac{V}{R} = \frac{20}{2} = 10A$$

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$$W = p \cdot t$$

$$P = I^2 \cdot R = 4^2 \cdot 2 = 32 \text{ W}$$

$$p \cdot t = 32 \cdot 7200 = 230.4 \text{ KJ}$$

$$p = \frac{v^2}{R}$$

$$U^2 = p \cdot R$$

$$\rho = 450 \text{ W}$$

$$U = \sqrt{P \cdot R}$$

$$R = 2\Omega$$

$$U = \sqrt{450 \cdot 2} = 30 \text{ V}$$

5- הליכה

$$U = 230 \text{ V} \quad \rho = 2000 \text{ } \Omega$$

$$P = \frac{V^2}{R} \quad R = \frac{V^2}{P} \quad R = \frac{230^2}{2000} = 26.45 \Omega$$

$$U = 115 \text{ V} \quad R = 26.45 \Omega$$

$$P = \frac{V^2}{R}$$

$$P = \frac{115^2}{26.45} = 500 \text{ W}$$

רצף

$$I = \frac{U}{R_T}$$

6 נאלי
G

$$R_T = R_1 + R_2 + R_3 + R_4 = 1K + 240 + 260 + 1.5K = 1000 + 240 + 260 + 1500 = 3000 \Omega = 3K\Omega$$

$$U = 9$$

$$I = \frac{9}{3000} = 0.003 = 3mA$$

$$U_1 = R_1 \cdot I = 0.003 \cdot 1000 = 3V$$

$$U_2 = R_2 \cdot I = 0.003 \cdot 240 = 0.72V$$

$$U_3 = R_3 \cdot I = 0.003 \cdot 260 = 0.78V$$

$$U_R = R_4 \cdot I = 0.003 \cdot 1500 = 4.5V$$

$$P_1 = I \cdot U_1 = 3 \cdot 0.003 = 9mW$$

ממ (החסיני)

$$P_2 = I \cdot U_2 = 0.72 \cdot 0.003 = 2.16mW$$

$$P_3 = I \cdot U_3 = 0.78 \cdot 0.003 = 2.34mW$$

$$P_4 = I \cdot U_4 = 4.5 \cdot 0.003 = 0.0135W$$

$$P = P_1 + P_2 + P_3 + P_4 = 0.027 \quad U \cdot I = 9 \cdot 0.003 = 0.027$$

$$P = 27mW$$

$$\eta = \frac{P_M}{P_E} = \frac{0.009}{0.027} = \frac{1}{3} = 33\%$$

$$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

G

$$\frac{1}{R_T} = \frac{1}{2000} + \frac{1}{4000} + \frac{1}{4000} = \frac{1}{1000} \quad R_T = 1000 \Omega$$

$$I = \frac{U}{R_T} = \frac{24}{1000} = 0.024 = 24mA$$

5 נאלי
רצף (החסיני)

$$I_1 = \frac{U}{R_1} = \frac{24}{2000} = 0.012A = 12mA$$

$$I_2 = \frac{U}{R_2} = \frac{24}{4000} = 0.006A = 6mA$$

$$I_3 = \frac{U}{R_3} = \frac{24}{4000} = 0.006A = 6mA$$

$$P_1 = I_1 \cdot U = 0.012 \cdot 24 = 0.288 \text{ V}$$

הספק
: 0.012A 24V

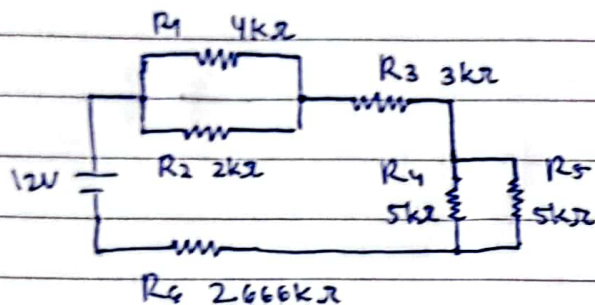
$$P_2 = I_2 \cdot U = 0.006 \cdot 24 = 0.144 \text{ V}$$

$$P_3 = I_3 \cdot U = 0.006 \cdot 24 = 0.144 \text{ V}$$

$$P_T = P_1 + P_2 + P_3 = 0.288 + 0.144 + 0.144 = 0.576 \text{ V}$$

$$P = I \cdot U = 0.024 \cdot 24 = 0.576 \text{ V}$$

$$\eta = \frac{P_1}{P_T} = \frac{0.288}{0.576} = \frac{1}{2} = 50\%$$



7 חידה
ר פו

$$\text{לפי } R_{45} = \frac{R_4 \cdot R_5}{R_4 + R_5} = 2.5 \text{ k}\Omega$$

$$\text{לפי } R_{12} = \frac{R_1 \cdot R_2}{R_1 + R_2} = 1.333 \text{ k}\Omega$$

$$\text{וגם } R_{123456} = R_{12} + R_3 + R_{45} + R_6 = 9.5 \text{ k}\Omega$$

$$R_T = 9.5 \text{ k}\Omega \quad I = \frac{U}{R_T} = \frac{12}{9.5 \text{ k}} = 0.00126 \text{ A}$$

$$P = U \cdot I = 12 \cdot 0.00126 = 0.01512 \text{ W}$$

$$I_{R_1} = I \cdot \frac{R_2}{R_1 + R_2} = 0.00126 \cdot \frac{2000}{6000} = 0.42 \text{ mA}$$

$$I_{R_2} = I - I_{R_1} = 0.84 \text{ mA}$$

$$I_{R_3} = I = 1.26 \text{ mA}$$

$$I_{R_4} = I \cdot \frac{R_5}{R_4 + R_5} = 0.00126 \cdot \frac{5000}{10000} = 0.63 \text{ mA}$$

$$I_{R_5} = I - I_{R_4} = 0.63 \text{ mA}$$

$$I_{R_6} = I = 1.26 \text{ mA}$$

20P
: PMN

1. PMN

1. PMN

1. PMN

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1. PMN

1. PMN

1. PMN

1. PMN

1. PMN

1. $\frac{1}{2} \times 1000 = 500$
3. 1000

1. PMN

1. PMN

1. PMN

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1. PMN

1. PMN

1. PMN

1. PMN

1. PMN

$$I_{R5} = I \cdot \frac{R_{46}}{R_5 + R_{46}} = 2 \cdot \frac{15}{45} = 0.666 \text{ A}$$

$$I_{R6} = I \cdot \frac{R_{45}}{R_{45} + R_6} = 2 \cdot \frac{2}{4} = 1 \text{ A}$$

$$I_{R7} = 2 \text{ A}$$

$$R_{46} = \frac{R_{44} \cdot R_6}{R_{44} + R_6} = 1.5 \Omega$$

$$R_{45} = \frac{R_{44} \cdot R_5}{R_{44} + R_5} = 2 \Omega$$

$$U_{R1} = I_{R1} \cdot R_1 = 2 \cdot 4 = 8 \text{ V}$$

1. פתרון

$$U_{R2} = I_{R2} \cdot R_2 = 1 \cdot 4 = 4 \text{ V}$$

$$U_{R3} = I_{R3} \cdot R_3 = 1 \cdot 4 = 4 \text{ V}$$

$$U_{R4} = I_{R4} \cdot R_4 = 0.333 \cdot 6 = 2 \text{ V}$$

$$U_{R5} = I_{R5} \cdot R_5 = 0.666 \cdot 3 = 2 \text{ V}$$

$$U_{R6} = I_{R6} \cdot R_6 = 1 \cdot 2 = 2 \text{ V}$$

$$U_{R7} = I_{R7} \cdot R_7 = 2 \cdot 3 = 6 \text{ V}$$

התוצאות הנ"ל הן הפתרון

$$P_1 = U_{R1} \cdot I_{R1} = 8 \cdot 2 = 16 \text{ W}$$

$$P_2 = U_{R2} \cdot I_{R2} = 4 \cdot 1 = 4 \text{ W}$$

$$P_3 = U_{R3} \cdot I_{R3} = 4 \cdot 1 = 4 \text{ W}$$

$$P_4 = U_{R4} \cdot I_{R4} = 2 \cdot 0.333 = 0.666 \text{ W}$$

$$P_5 = U_{R5} \cdot I_{R5} = 2 \cdot 0.666 = 1.333 \text{ W}$$

$$P_6 = U_{R6} \cdot I_{R6} = 2 \cdot 1 = 2 \text{ W}$$

$$P_7 = U_{R7} \cdot I_{R7} = 6 \cdot 2 = 12 \text{ W}$$

$$P_E = P_1 + P_2 + P_3 + P_4 + P_5 + P_6 + P_7 = 40 \text{ W}$$

$$P = \frac{U^2}{R}$$

$$250 = \frac{100^2}{R}$$

$$R = 40 \Omega$$

מסלול 8

(10)

$$\frac{1}{R_{BCD}} = \frac{1}{R_B} + \frac{1}{R_C} + \frac{1}{R_D} = \frac{3}{40}$$

$$R_{BCD} = \frac{40}{3} = 13.333 \Omega$$

$$R_A = 40 \Omega$$

$$R_T = R_A + R_{BCD} = 53.333 \Omega$$

$$I = \frac{100}{53.333} = 1.875 \text{ A}$$

$$I_{R_A} = I = 1.875 \text{ A}$$

$$I_{R_B} = I \cdot \frac{R_{CD}}{R_B + R_{CD}} = 0.625 \text{ A}$$

$$R_{CD} = \frac{R_C \cdot R_D}{R_C + R_D} = 20 \Omega$$

$$I_{R_C} = I_{R_D} = I_{R_B} = 0.625 \text{ A}$$

$$R_{BD} = \frac{R_B \cdot R_D}{R_B + R_D} = 20 \Omega$$

$$P_A = I R_A^2 \cdot R_A = 140.625 \text{ ו}$$

$$P_B = I R_B^2 \cdot R_B = 15.625 \text{ ו}$$

$$P_C = P_D = P_B = 15.625 \text{ ו}$$

ב. סמורה שנתנה נערכה תוצאות והוספון יתו ס כ נגד מ.