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Hesaplar

1. soru

$\frac{1}{Res} = \sum_{i=1}^{n} \frac{1}{R_i}$, $I = \frac{V}{Res}$, $P = I.V$

Devre-1

$\frac{1}{Res} = \frac{1}{220} + \frac{1}{470} = \frac{690}{220.470}$

$Res = 149,85\ \Omega$

$I_{Hesap} = \frac{5}{149,85} \cdot 10^3 = 33,366\ mA$

$P = 33,366 . 5 = 166,83\ mW$

Devre-2

$\frac{1}{Res} = \frac{1}{220} + \frac{1}{1000} = \frac{1220}{1000.220}$

$Res = 180,327\ \Omega$

$I_{Hesap} = \frac{5}{180,327} \cdot 10^3 = 27,727\ mA$

$P = 27,727 . 5 = 138,6\ mW$

Devre-3

$\frac{1}{Res} = \frac{1}{220} + \frac{1}{470} + \frac{1}{1000}$

$Res = 130,32\ \Omega$

$I_{Hesap} = \frac{5}{130,32} \cdot 10^3 = 38,367\ mA$

$P = 38,367 . 5 = 191,84\ mW$

2. soru

$Res = \sum_{i=1}^{n} R_i$, $I = \frac{V}{Res}$, $P = I.V$

Devre-1

$Res = R_1 + R_2 = 220 + 470$

$Res = 680\ \Omega$

$I = \frac{5}{690} \cdot 10^3 = 7,246\ mA$

$P = 5 . 7,246 = 36,23\ mW$

Devre-2

$Res = R_1 + R_3 = 220 + 1000$

$Res = 1220\ \Omega$

$I = \frac{5}{1220} \cdot 10^3 = 4,098\ mA$

$P = 5 . 4,098 = 20,49\ mW$

Devre-3

$Res = R_1 + R_2 + R_3 = 220 + 470 + 1000$

$Res = 1690\ \Omega$

$I = \frac{5}{1690} \cdot 10^3 = 2,958\ mA$

$P = 5 . 2,958 = 14,79\ mW$

Ölçümler

Paralel	V (V)	I_1 (mA)	I_2 (mA)	I_3 (mA)	$I_{ölç}$ (mA)	I_{Hesap} (mA)	Res (Ω) (V/$I_{ölç}$)	Res (Ω) (Hesap)	P (mW) (V x $I_{ölç}$)
R_1, R_2	5	22,7	10,6		33,4	33,366	149,7	149,85	166,83
R_1, R_3	5	22,7		5	27,7	27,727	180,5	180,33	138,6
R_1, R_2, R_3	5	22,7	10,6	5	38,4	38,367	130,2	130,32	191,84

Seri	V (V)	V_1 (V)	V_2 (V)	V_3 (V)	$I_{ölçün}$ (mA)	I_{Hesap} (mA)	Res (Ω) (V/$I_{ölç}$)	Res (Ω) (Hesap)	P (mW) (V x $I_{ölç}$)
R_1, R_2	5	1,59	3,41		7,25	7,246	689,7	690	36,23
R_1, R_3	5	0,90		4,10	4,10	4,098	1219,5	1220	20,49
R_1, R_2, R_3	5	0,65	1,39	2,96	2,96	2,958	1689,1	1690	14,79