

PREGUNTA 1

$$\rightarrow R3 + R4 + R5 = R_A$$

$$10\Omega + 20\Omega + 18\Omega = 48\Omega$$

$$\rightarrow R_A + R2 = \frac{1}{48\Omega} + \frac{1}{16\Omega} = 12\Omega = R_B$$

$$\rightarrow R_B + R6 = \frac{1}{\frac{1}{12\Omega} + \frac{1}{24\Omega}} = 8\Omega = R_C$$

$$\rightarrow R_C + R1 = 8\Omega + 4\Omega = 12\Omega = R_D$$

$$\rightarrow R7 + R8 = \frac{1}{\frac{1}{12\Omega} + \frac{1}{4\Omega}} = 3\Omega = R_E$$

$$\rightarrow R_E + R9 = 3\Omega + 3\Omega = 6\Omega = R_F$$

$$\rightarrow R_F + R_D = \frac{1}{\frac{1}{12\Omega} + \frac{1}{6\Omega}} = 4\Omega$$

$$\underline{R_T = 4\Omega}$$

PREGUNTA 2:

$$\rightarrow R3 + R4 = RA = 1800 \Omega$$

$$1200 \Omega + 800 \Omega$$

$$\rightarrow RA + R5 = RB$$

$$\frac{1}{1} = 553,846 \Omega$$

$$\frac{1}{1} + \frac{1}{1}$$

$$1800 \Omega + 800 \Omega$$

$$\rightarrow RB + R6 + R7 = RC$$

$$553,846 + 1000 \Omega + 2000 \Omega = 3553,846 \Omega$$

$$\rightarrow RC + R8 = RD$$

$$\frac{1}{1} = 480,405 \Omega$$

$$\frac{1}{1} + \frac{1}{1}$$

$$3553,846 \Omega + 1000 \Omega$$

$$\rightarrow RD + R1 + R9 = RE$$

$$480,405 \Omega + 1000 \Omega + 700 \Omega = 2480,405 \Omega$$

$$\rightarrow RE + R10 = RF$$

$$\frac{1}{1} = 604,902 \Omega$$

$$\frac{1}{1} + \frac{1}{1}$$

$$2480,405 \Omega + 800 \Omega$$

$$\rightarrow RF + R2 = 604,902 \Omega + 500 \Omega$$

$$\textcircled{a} \underline{RT = 1104,902 \Omega}$$

2 b.- $V = 40V$ $I = 40V / 1104,902 \Omega = 0,036 A$

$R_F = 604,9 \Omega$

$R_Z = 500 \Omega$

$V_F = 21,8 V$

$V_Z = 18 V$

$I_F = 0,036 A$

$I_Z = 0,036 A$

$R_{E10} = 800 \Omega$

$R_E = 2480,4 \Omega$

$R_{I10} = 800 \Omega$

$V_E = 21,8 V$

$V_{I10} = 21,8 V$

$I_E = 0,0087 A$

$I_{I10} = 0,027 A$

$R_{D10} = 780,4 \Omega$

$R_{I1} = 1000 \Omega$

$V_D = 6,8 V$

$V_{I1} = 8,7 V$

$I_D = 0,0087 A$

$I_{I1} = 0,0087 A$

$R_9 = 700 \Omega$

$V_9 = 6,09 V$

$I_9 = 0,0087 A$

$R_C = 3553,85 \Omega$

$R_8 = 1000 \Omega$

$V_C = 6,8 V$

$V_8 = 6,8 V$

$I_C = 0,002 A$

$I_8 = 0,0068 A$

$R_B = 553,85 \Omega$

$R_6 = 1000 \Omega$

$V_B = 1,1 V$

$V_6 = 2 V$

$I_b = 0,002 A$

$I_6 = 0,002 A$

$R_A = 2000 \Omega$

$R_4 = 1800 \Omega$

$V_A = 4 V$

$V_4 = 1,1 V$

$I_A = 0,002 A$

$I_4 = 0,0006 A$

$R_S = 800 \Omega$

$R_3 = 1000 \Omega$

$V_S = 1,1 V$

$V_3 = 0,6 V$

$I_S = 0,0013 A$

$I_3 = 0,0006 A$

$R_4 = 800 \Omega$ $I_4 = 0,0006 A$ $V_4 = 0,48 V$

b) $V_{E8} = 6,8 V$ c) $V_{E4} = 0,48 V$ d) $I_{E3} = 0,0006 A$

PREGUNTA 3-

$$\rightarrow R9 + R1 + R4 = RA$$

$$1000\Omega + 800\Omega + 1000\Omega = 2800\Omega$$

$$\rightarrow RA + RS = RB$$

$$\begin{array}{r} \frac{1}{2800\Omega} + \frac{1}{4000\Omega} = 1647,058\Omega \end{array}$$

$$\rightarrow RB + R6 + R8 = RC$$

$$1647,058\Omega + 1000\Omega + 1000\Omega = 3647,058\Omega$$

$$\rightarrow RC + R2 = RD$$

$$\begin{array}{r} \frac{1}{3647,058\Omega} + \frac{1}{1000\Omega} = 784,810\Omega \end{array}$$

$$\rightarrow RD + R3 + R7 = RT$$

$$784,810\Omega + 800\Omega + 1000\Omega = 2584,810\Omega$$

$$\textcircled{a} \quad \underline{RT = 2584,810\Omega.}$$

$$3b) \quad R_T = 2584,81 \\ U_T = 40V \\ I_T = 0,015A$$

$$R_D = 784,8\Omega \\ V_D = 11,8V \\ I_D = 0,015A$$

$$R_3 = 800\Omega \\ V_3 = 12V \\ I_3 = 0,015A$$

$$R_T = 1000\Omega \\ V_T = 15V \\ I_T = 0,015A$$

$$R_C = 3647,1\Omega \\ V_C = 11,8V \\ I_C = 0,0032A$$

$$R_2 = 1000\Omega \\ V_2 = 11,8V \\ I_2 = 0,012A$$

$$R_B = 1647,1\Omega \\ V_B = 5,3V \\ I_B = 0,0032A$$

$$R_6 = 1000\Omega \\ V_6 = 3,2V \\ I_6 = 0,0032A$$

$$R_A = 2800\Omega \\ V_A = 5,3V \\ I_A = 0,002A$$

$$R_5 = 4000\Omega \\ V_5 = 5,3V \\ I_5 = 0,0013A$$

$$R_1 = 800\Omega \\ V_1 = 1,6V \\ I_1 = 0,002A$$

$$R_9 = 1000\Omega \\ V_9 = 2V \\ I_9 = 0,002A$$

$$R_4 = 1000\Omega \\ V_4 = 2V \\ I_4 = 0,002A$$

$$b) \quad V_{R3} = 12V \\ c) \quad V_{R1} = 1,6V \\ d) \quad I_{R5} = 0,0013A$$