



$$R_{q34} = R_3 + R_4$$

$$R_{q34} = 4.4k\Omega$$

$$\frac{1}{R_{q342}} = \frac{1}{R_{34}} + \frac{1}{R_2}$$

$$\frac{1}{R_{q342}} = \frac{1}{4.4} + \frac{1}{3.9}$$

$$R_{q432} = 2,067k\Omega$$

$$R_T = 4,87k\Omega$$

$$V = IR$$

$$V_T = 10v; I_T = 2,053[mA]$$

$$V_{q342} = 2,067k\Omega * 2,053[mA]$$

$$V_{q342} = 4,243V$$

$$I_{q342} = \frac{V_{q342}}{R_{q342}}$$

$$I_{q342} = 0.964[mA]$$

Trayectoria1

$$\Sigma V_{sum} = \Sigma V_{abs}$$

$$V_{R1}$$

$$10V = V_{R1} + 2.12v + 2.12$$

$$V_{R1} = 2.065V$$

$$10V = 2.065V + V_{R3} + 2.12$$

$$V_{R3} = 2.13V$$

$$10V = 2.065V + 2.13V + V_{R4}$$

$$V_{R4} = 2.13V$$

$$V_{R5}$$

$$10V = V_{R1} + V_{R2} + V_{R5}$$

$$10V = 2.065V + 4.243V + V_{R5}$$

$$V_{R5} = 3.69V$$

Trayectoria2

$$V_{R1}$$

$$10V = V_{R1} + 4.243v + 3.69v$$

$$V_{R1} = 2.065V$$

$$V_{R2}$$

$$10V = V_{R1} + V_{R2} + V_{R5}$$

$$10V = 2.065V + V_{R2} + 3.69v$$

$$V_{R2} = 4.243V$$

$$V_{R5}$$

$$10V = V_{R1} + V_{R2} + V_{R5}$$

$$10V = 2.065V + 4.243V + V_{R5}$$

$$V_{R5} = 3.69V$$

Trayectoria3

$$V_{R2}$$

$$10V = V_{R2} + 2.12v + 2.12v$$

$$V_{R2} = 5.70V$$

$$V_{R43}$$

$$10V = V_{R1} + V_{R4} + V_R$$

$$10V = 2.065V + V_{R2} + 3.69v$$

$$V_{R34} = 2.18V$$

Análisis de resultados

Trayectoria1

$$error\% = \frac{20.015 - 20.09}{20.015} * 100$$

$$error\% = -0.37$$

Trayectoria2

$$error\% = \frac{20 - 20}{20} * 100$$

$$error\% = 0$$

Trayectoria3

$$error\% = \frac{20.06 - 18.49}{20.06} * 100$$

$$error\% = 7.82$$

LKC

Nodo A

$$I_{R1} + I_{R2} + I_{R3}$$

$$\frac{v_a - 10}{2.8} + \frac{v_a - v_B}{4.4} + \frac{v_a - v_B}{3.9} = 0$$

$VB = 0v$ hace tierra

$$\frac{v_a - 10}{2.8} + \frac{v_a}{4.4} + \frac{v_a}{3.9} = 0$$

$$va = 4.24V$$

LVK

$$-v_s - v_{R1} + v_{R4} - v_{R5} = 0$$

$$-10 - I_{R1} + va - v_B - 1.8I_{R1} = 0$$

$$I_{R1} = \frac{v_a - 10}{2.8}$$

$$I_{R1} = 2.057$$

Nodo B

$$I_{R1} + I_{R2} + I_{R3} \\ \frac{v_B - 10}{2.8} + \frac{-v_B - v_a}{4.4} + \frac{v_B - v_a}{3.9} = 0$$

$V_a = 0V$ hace tierra

$$\frac{v_B - 10}{2.8} + \frac{v_B}{4.4} + \frac{v_B}{3.9} = 0$$

$$v_B = 4.24V$$

LVK

$$-v_s - v_{R1} + v_{R2} - v_{R5} = 0$$

$$-10 - I_{R1} + v_B - v_a - 1.8I_{R1} = 0$$

$$I_{R1} = \frac{v_B - 10}{2.8}$$

Análisis de resultados

Nodo1

$$error\% = \frac{9.192 - 9.14}{9.192} * 100$$

$$error\% = 0.56$$

Nodo2

$$error\% = \frac{9.1926 - 9.14}{9.1926} * 100$$

$$error\% = 0.57$$

Nodo3

$$error\% = \frac{4.114 - 4.1}{4.114} * 100$$

$$error\% = 0.34$$

Nodo4

$$error\% = \frac{3.9 - 3.97}{3.9} * 100$$

$$error\% = 1.79$$

Nodo5

$$error\% = \frac{4.11 - 4.1}{4.11} * 100$$

$$error\% = 0.24$$