



$$\bar{i} = 12.079 [\mu A]$$

$$\bar{i}_4 = 1.481 [mA]$$

$$I_1 = \frac{V_N}{470} \rightarrow V_N = (470)(20.793 \times 10^{-6})$$

$$6.00 \text{ mV}$$

$$(5.1 \times 10^{-3})(1800)$$

[Nodo A]

$$V_N = 2.82$$

$$i_{\text{entran}} = i_{\text{salen}}$$

$$\bar{i} = i_1 + i_2$$

$$\frac{12 - V_1}{1800} = \frac{V_1 - 0}{470} + \frac{V_1 - V_2}{2200} \rightarrow \frac{12 - V_1}{180} = \frac{V_1}{47} + \frac{V_1 - V_2}{220}$$

$$= 47 \cdot 220 (12 - V_1) = 180 (220 V_1 + 47 V_1 - 47 V_2)$$

$$12408 - 1034 V_1 = 3960 V_1 + 846 V_1 - 846 V_2$$

$$V_1 = \frac{12408 + 846 V_2}{5840}$$

$$V_2 = \frac{12408 + 846 V_2}{5840}$$

[Nodo B]

$$i_2 + i_4 = i_3$$

$$\frac{V_1 - V_2}{2200} + \frac{8 - V_2}{1500} = \frac{V_2 - 0}{3900}$$

$$\frac{12408 + 846 V_2}{22 \cdot 5840} - \frac{V_2}{22} + \frac{8 - V_2}{15} = \frac{V_2}{39}$$

$$\frac{12408}{22 \cdot 5840} + \frac{8}{15} = \frac{V_2}{39} + \frac{V_2}{15} + \frac{V_2}{22} - \frac{846 V_2}{22 \cdot 5840}$$

$$\frac{2759}{4380} = \frac{197 V_2}{1430} - \frac{846 V_2}{22 \cdot 5840}$$

$$V = 4.80195 [V] \rightarrow V_1 = 2.82028 [V]$$

Errores

$$V_E = 4,8 \text{ [V]}$$

$$V_i = 2,82 \text{ [V]}$$

$$v_1) \text{ Error} = \frac{2,82028 - 2,82}{2,82028} = 0,00983 \%$$

$$v_2) \text{ Error} = \frac{4,80195 - 4,8}{4,80195} = 0,041 \%$$