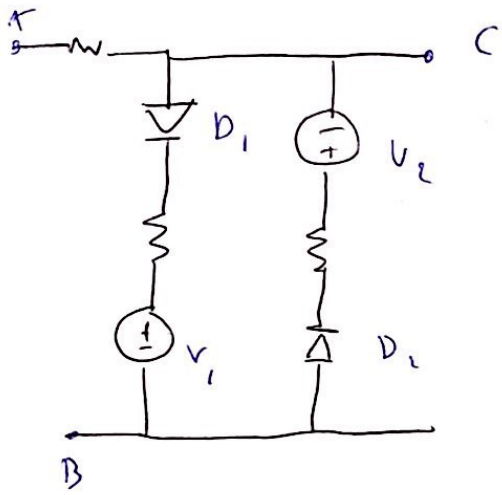
Javier Gómez López

1.

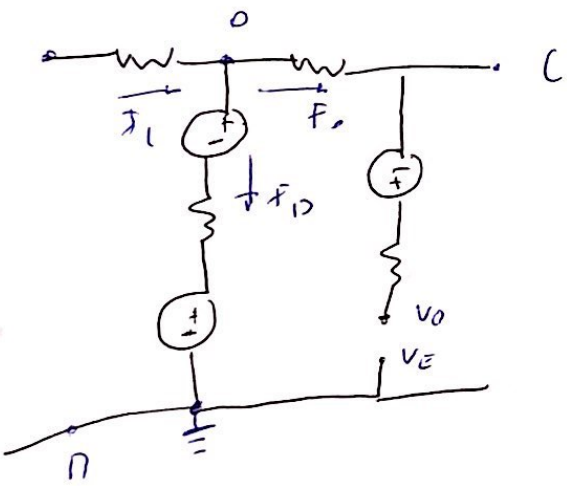


$V_1 = 7V \quad V_2 = 4V$

$V_\gamma = 0{,}7V \quad R = 100\,\Omega$

$V_1 = V_A - V_B \quad V_o = V_C - V_B$

a) D_1 on D_2 off



$I_1 = I_o + I_D$

$I_o = \frac{V_o - V_C}{R}$

$I_1 = \frac{V_A - V_o}{R}$

$V_o - V_B = 0{,}7 - I_D \cdot 100 + 2$

$V_o - V_B = 2{,}7 - 100 I_D$

$I_D = \frac{V_o - V_B - 2{,}7}{-100}$

$$\frac{V_A - V_o}{R_0} = \frac{V_o - V_C}{100} + \frac{V_o - V_B - 2{,}7}{-100}$$

$V_A - V_o = V_o - V_C - V_o + V_B + 2{,}7$

$V_A - V_o = V_B - V_C + 2{,}7$

$V_A - V_o = V_{out} + 2{,}7$

$V_{in} = V_A - V_B \quad V_{in} - V_{out} = V_A$

$V_{out} = V_C - V_B$

$V_A - V_B = I_1 \cdot R + 0{,}7 + I \cdot R + 0{,}7$

$V_{in} = +IR + 2{,}7 + IR + 0{,}7$

$V_{in} - 2IR - 2{,}7 = 0$

$I = \frac{V_{in} - 2{,}7}{200}$