Prova N1 - Analógicas - Grau Técnico - 13/05/22

01) (V1) = 220V | 60Hz, (V2) = 20V, R = 500Ω

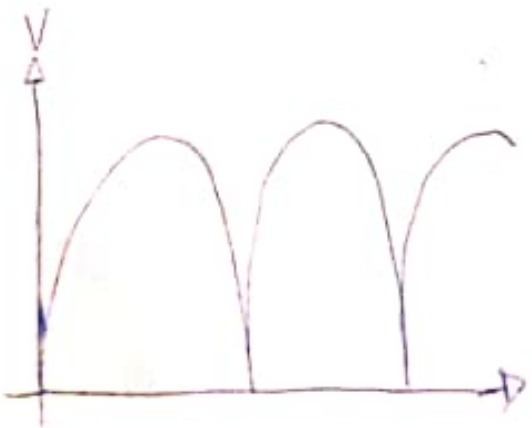
a) $V_{(Saída\ Pico)} = \frac{20\sqrt{2}}{2} - 0,7 = 14,14 - 0,7 = \boxed{13,44\ V}$ → V(S. Pico)

b) $I_L = \frac{V_{cc}}{R} = \frac{8,56}{500} = \boxed{17,12\ mA}$

c) $I_D = \frac{I_L}{2} = \frac{17,12\ mA}{2} = \boxed{8,56\ mA}$

d) PIV: $V_2(pico) = 20\sqrt{2} = \boxed{28,28V}$

e) f(saída) = 2 * f(entrada)
f(saída) = 2 * 60Hz
f saída = **120Hz**



(2) C: 700 μF ; R: 500 ; f: 120 Hz ; Vmax: 13,44 V

(a) $V_{cc} = \frac{2 \cdot R \cdot f \cdot C \cdot V_{max}}{1 + 2 R f C} = \frac{2 \cdot 500 \cdot 120 \cdot 700 \cdot 10^{-6} \cdot 13,44}{1 + 2 \cdot 500 \cdot 120 \cdot 700 \cdot 10^{-6}} =$

$= \frac{1128,96}{85}$ **13,28 V**

(b) $V_{(ondulação)} = \frac{V_{cc}}{R f C} = \frac{13,28}{500 \cdot 120 \cdot 700 \cdot 10^{-6}} = \frac{13,28}{42} =$ **0,316 V**

(3) (a) $R_L = 4 * V_2 \sqrt{2} = 4 \cdot 440 \cdot \sqrt{2} =$ **2.489,0 V**

(b) $2 \cdot \sqrt{2} \cdot V_2 = 2 * 440 * \sqrt{2} =$ **1244,5 V**

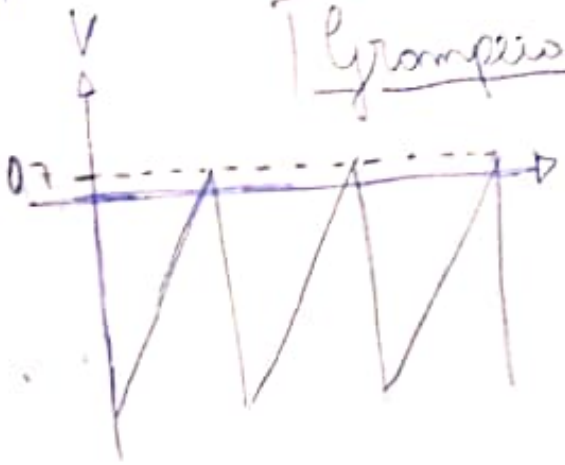
V_1: 220 V
V_2: 440 V

(c) $C_1 = V_p$ / $C_2, C_3, C_4 = 2 V_p$

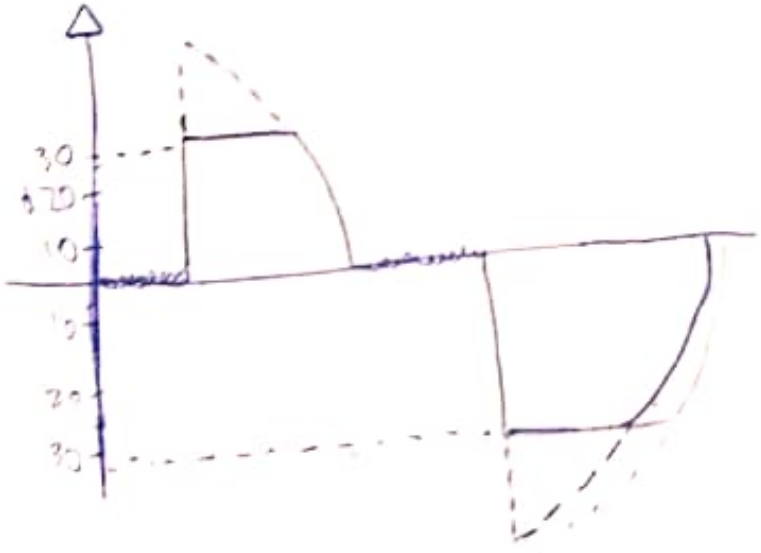
$C_1 = V_p = 440 \sqrt{2} = 622.25$

$C_2, C_3, C_4 = 2 V_p = 2 \cdot 662.25 \cong 1244,5$

04) Grampeia negativamente



05) $R = 1K\Omega$ $R_L = 50K\Omega$



Isaac Freitas

Respostas - N1 - Analógicas.

01 ⇒ a. 13,44V

b. 17,12mA

c. 8,56mA

d. 28,28V.

02 ⇒ a. 13,28V

b. 0,316V

03 ⇒ a. 2,489V

b. 1244,5V

c. 622,25 / 1244,5.