TE – 20190206

① a) $U_a = 25V$, $I_a = 20A$ $\quad P_a = 25 \cdot 20 = 500W$

b) $U_b = 25 + \Delta U$; $I_b = 20 - \Delta I$

$U_b = 25 + \Delta U$; $I_b = 20 - \Delta U \cdot \frac{20}{5}$; $P_b \approx 25 \cdot 20 + \Delta U 20 - 25 \cdot \Delta U \cdot \frac{20}{5} = 500 - \Delta U \cdot 100$

$P_b < P_a = 500W$

c) $U_c = 25 - \Delta U$; $I_c = 20 + \Delta I$

$U_c = 25 - \Delta U$; $I_c = 20 + \frac{5}{25} \cdot \Delta U$; $P_c \approx 25\,20 - 20\Delta U + 25 \cdot \frac{5}{25} \Delta U = 500 - 15\Delta U$

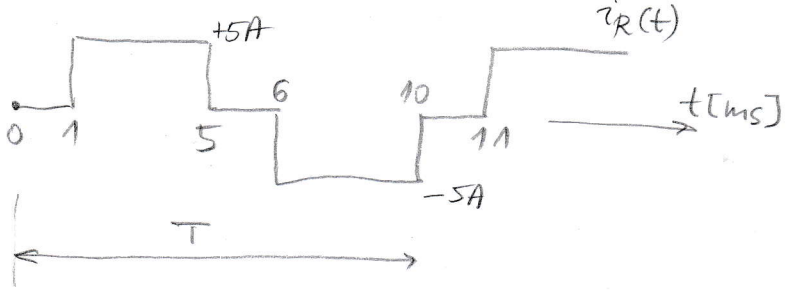
$P_c < P_a = 500W$

$P_{max} = P_a = \underline{500W}$; $U_Q = \underline{25V}$; $I_Q = \underline{20A}$.

② $V_o = V_I \cdot \frac{N_s}{N_p} \cdot D$; $V_{omin} = 200 \frac{1}{10} \cdot 0{,}45 = \underline{9V}$

$n = \frac{V_{omin}}{V_m} = \frac{9}{4{,}2} = 2{,}14 \approx \underline{2}$

③



$$I_{ef} = \sqrt{\frac{1}{T} \int_0^T i_R^2(t)\, dt}$$

$$= \sqrt{\frac{1}{10ms} \cdot 5^2 \cdot 8ms} = 5\sqrt{\frac{8}{10}} = \underline{4{,}47\,[A]}$$