

Q1

Student ID  $\rightarrow$  xx ...  $\overbrace{4\ 3\ 2\ 1}^{\text{last four digits}}$

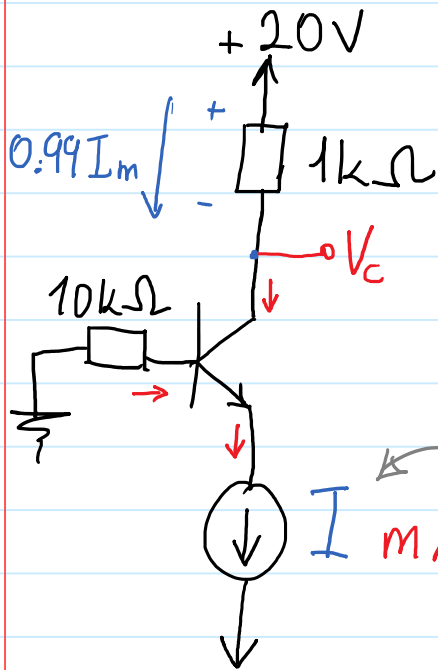
$I = (3 + 1) + 1 = 5$

$\overline{I} = \boxed{?}$

fixed

Write only the answer, no calculations!!!

Q2



$$\beta = 100 \Rightarrow \alpha = \frac{\beta}{\beta + 1} = 0.99$$

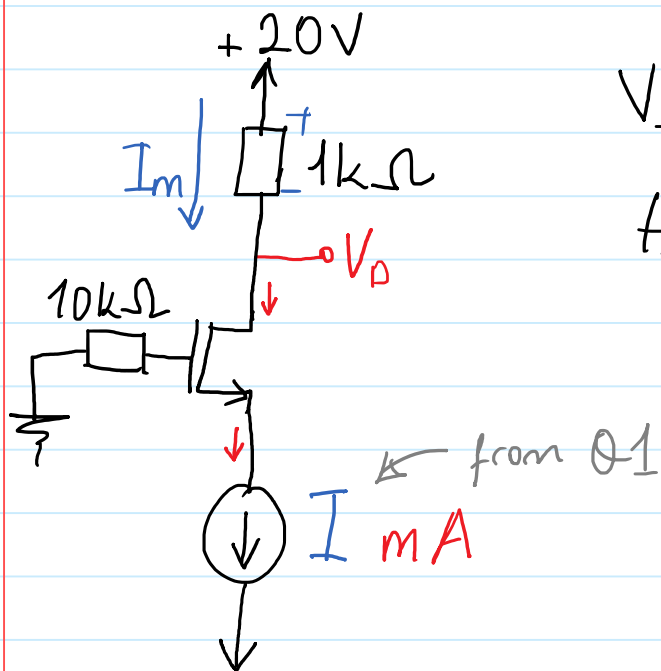
Hint: Transistor is on.

$$V_c = \boxed{?} \text{ V}$$

$$V_R = 1k \cdot 0.99 I_m = 0.99 \cdot I$$

$$V_c = 20 - V_R = 20 - (0.99) \cdot I$$

Q3



$$V_t = 1V$$

Hint: Transistor is on.

$$V_D = \boxed{?} V$$

$$V_R = 1k \cdot I_m = I \cdot 1$$

$$V_D = 20 - V_R = 20 - 1 \cdot I$$