(Q1) Determine the dc current gain β_{DC} and emitter current I_E of a transistor whose $I_B = 50\,\mu A$ and $I_C = 3.65\,mA$

(Q2) Sketch an ideal family of collector curves for the circuit shown in Fig. Q2a) for I_B = 5μA to 25 μA in 5μA increments. Assume β_{DC} = 100 and that V_{CE} does not exceed breakdown.

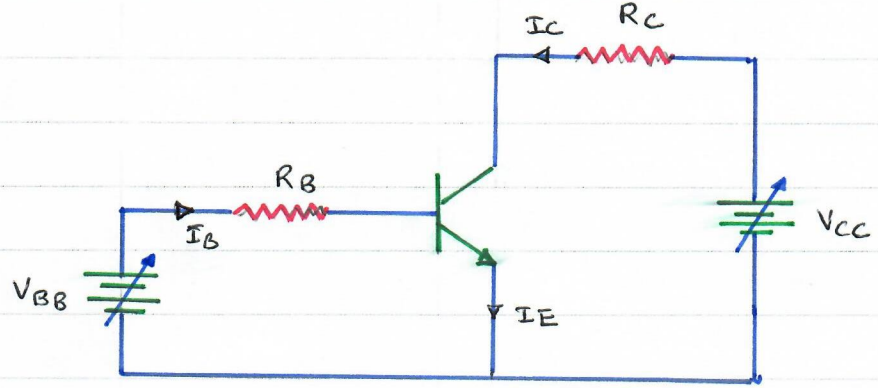

Fig. Q2a)

(Q3) Determine the values of I_B, I_C, I_E, V_{BE}, V_{CE} and V_{CB} in the circuit shown in Fig. Q below. The transistor is a silicon transistor with $\beta_{dc} = 150$.

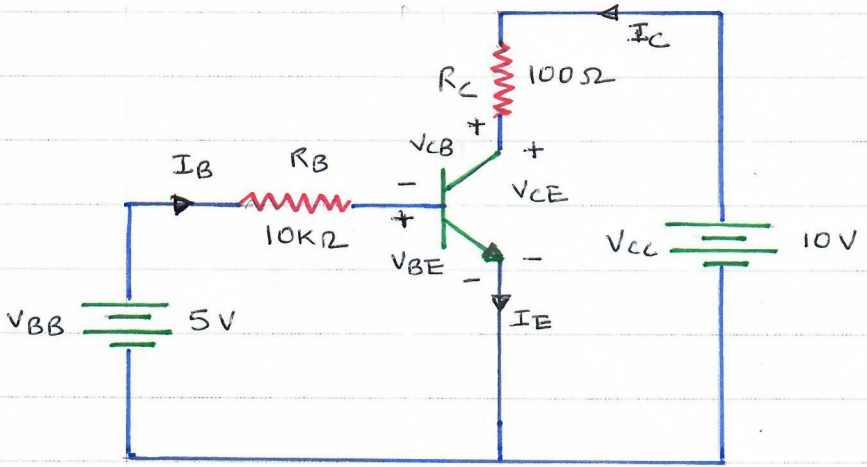

Fig. Q

Q4 For the transistor circuit shown in Fig. Q4, find

i) V_{CB}, Is collector base junction forward or reverse biased

ii) Power consumed by transistor.

Neglect leakage current.

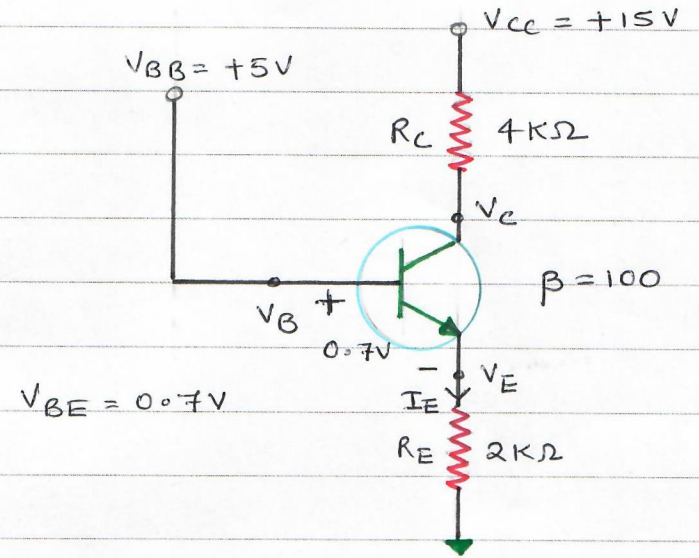

Fig. Q4