

*This part of the experiment is prepared with Online LaTeX Editor Overleaf, and the circuits are drawn in LTspice. Visit the website for the code here:*

**<https://www.overleaf.com/read/fcrdghprsrgz#14b97a>**

---

## **1. PRELIMINARY WORK**

**1.1** Explain how to test a BJT to determine whether it is defected or not, by means of an ohmmeter?

**Answer:** TBD.

**1.2** For the circuit given in Fig. 2,  $Q_1$  is an npn-BJT where  $V_{BE,ON} = 0.7V$ ,  $V_{BC,ON} = 0.7V$ , and  $\beta=100$ . What should be the minimum value of  $R_B$  for the BJT to function in active mode if  $V_{BB} = 5V$ ,  $V_{CC} = 10V$ , and  $R_C = 1k\Omega$ ,  $R_E = 470\Omega$ . (Hint: Write two KVL equations for B-E and B-C terminals).

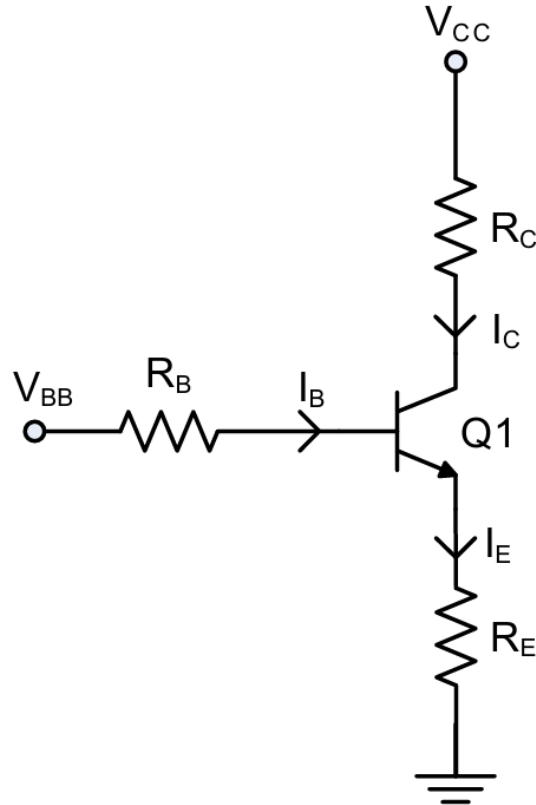


Figure 2.

**Answer:** TBD.