

Q.1) for the self-biasing circuit given in below figure, Suppose that  $h_{FE} = 100$ ,  $R_1 = R_2 = 26k\Omega$ , and  $V_{CC} = 10V$ . Find the value of  $R_E$  and  $R_C$  such that the BJT is biased in the active region at  $I_{CQ} = 2mA$  and  $V_{CEQ} = 4V$ .

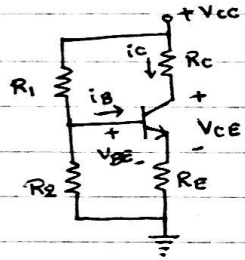


Fig. A BJT self-biasing circuit.

Q.2) for the self-biasing circuit given below, Suppose that  $h_{FE} = h_{fe} = 100$ ,  $R_1 = R_2 = 26k\Omega$ ,  $R_C = 980\Omega$ ,  $R_E = 2k\Omega$ , and  $V_{CC} = 10V$ . Find (a)  $g_m$  (b)  $V_E$  (c)  $R_{in}$  and (d)  $A_v$

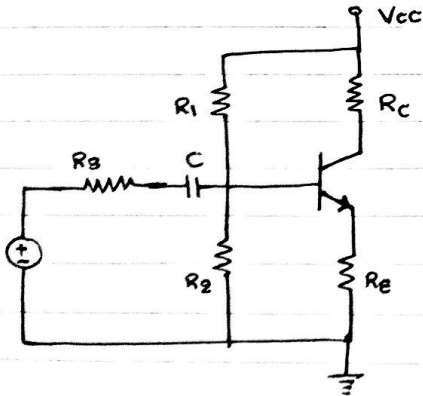


Fig. A BJT capacitively Coupled to an ac source.

Q.3) for the emitter follower given in below figure. Suppose that  $h_{FE} = h_{fe} = 100$ ,  $R_1 = R_2 = 26k\Omega$ ,  $R_E = R_L = 2k\Omega$ ,  $R_3 = 1k\Omega$ , and  $V_{CC} = 10V$ . Find (a)  $V_E/V_B$  (b)  $R_{in}$ , and (c)  $R_o$ .

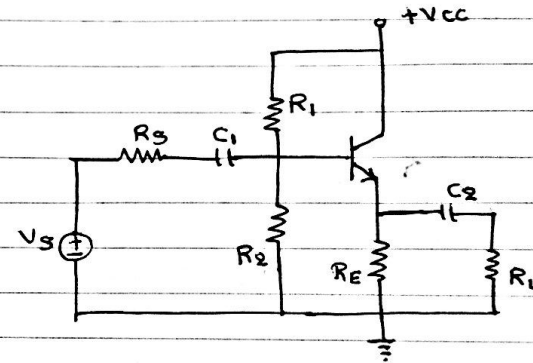


Fig. Common-collector amplifier (emitter follower)