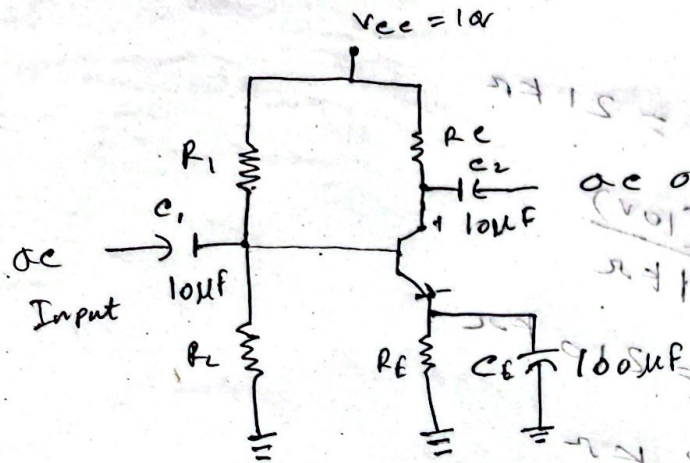


ID: 350



Calculation:

ID last 3 digit = 350 - sum = 81 So, 9

Solve D.C 547c.

from google $I_E = 2\text{mA}$, $V_{CE} = 5\text{V}$, $V_{CC} = 10\text{V}$, $\beta = 420$

Solve:

$$V_E = \frac{1}{10} V_{CC} = \frac{1}{10} (10\text{V}) = 1\text{V}$$

$$R_E = \frac{V_E}{I_E} \approx \frac{V_F}{I_E} = \frac{1\text{V}}{2\text{mA}} = 500\Omega$$

$$R_C = \frac{V_{RC}}{I_C} = \frac{V_{CC} - V_{CE} - V_F}{I_C} = \frac{(10 - 5 - 1)\text{V}}{2\text{mA}} = 4\text{k}\Omega$$

$$V_B = V_{BE} + V_E = 0.7V + 1V = 1.7V$$

$$R_2 \leq \frac{1}{10} \beta R_E$$

$$V_B = \frac{R_2}{R_1 + R_2} V_{CC}$$

$$R_2 \leq \frac{1}{10} (420) \times (0.5k\Omega) = 21k\Omega$$

$$V_B = 1.7V = \frac{(21k\Omega)(10V)}{R_1 + 21k\Omega}$$

$$\text{or, } 1.7R_1 + 35.7k\Omega = 210k\Omega$$

$$\text{or, } 1.7R_1 = 174.3k\Omega$$

$$\text{or, } R_1 = 102.52k\Omega$$

$$R_E = 500\Omega$$

$$R_C = 4k\Omega$$

$$R_1 = 102k\Omega$$

$$R_2 = 21k\Omega$$

