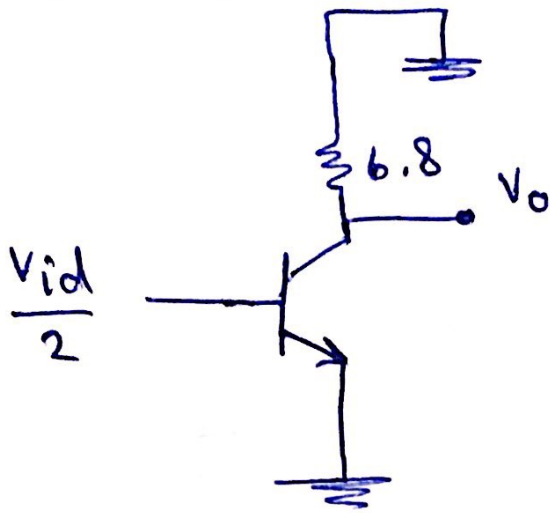


$A_d :$



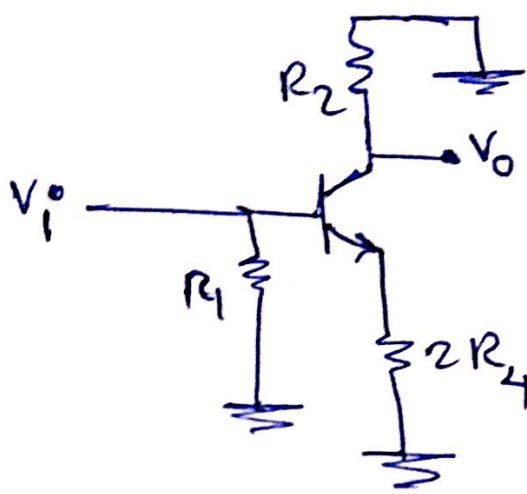
$$A_d = \frac{v_o}{\frac{v_{id}}{2}} =$$

$$= -g_m(6.8) \Rightarrow$$

$$\Rightarrow A_d = -\frac{1}{2} \times 40 \times 6.8 = \underline{136}$$

$$\Rightarrow CMRR = \left| \frac{A_d}{A_c} \right| = \frac{136}{0.10} = \underline{1360}$$

$A_C$ :

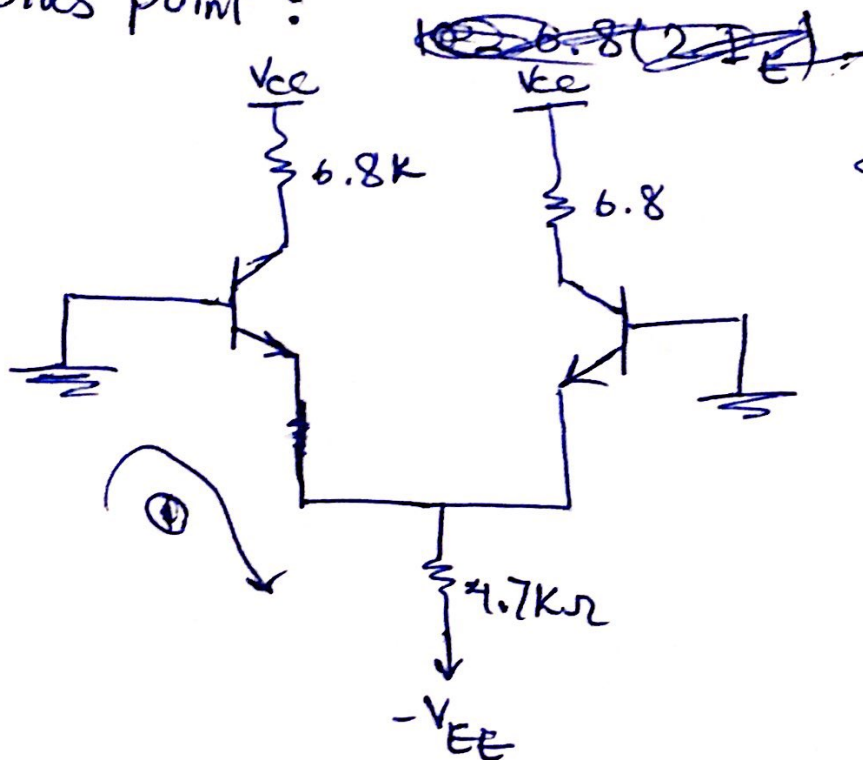


$$A_C = \frac{V_o}{V_i} = \frac{g_m R_2}{1 + g_m (2R_4)}$$

$$= \frac{-g_m R_2}{1 + g_m (2R_4)}$$

$$= \frac{-40 \times 6.8}{1 + 40 \times 9.4} = -0.101$$

Bias point:



$$\text{KVL 1: } -0.7 - 4.7(2I_E) + 10 = 0 \Rightarrow I_E = 0.98 \text{ mA}$$

$$\Rightarrow g_m \approx 40$$