

ELECTRONICS 2

HOMEWORK 2

Make the Spice simulations of the circuits analyzed in first homework.

1. For the circuit in Figure 1, transistor parameters for T_1 are $V_{A1}=\infty$, $B_F=\beta_f=80$, $V_T=26\text{mV}$ and $V_{BE1}=0.7\text{V}$. ($V_{CC}=5\text{V}$, $R_1=12\text{k}\Omega$, $R_2=18\text{k}\Omega$, $R_C=220\Omega$, $R_E=1\text{k}\Omega$)

- Determine the DC collector current for BJT.
- Find the small signal voltage gain V_o/V_{in} .
- Determine the input and output resistances.

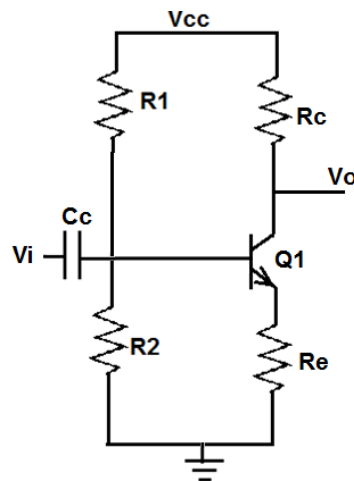


Figure 1

2. For the amplifier shown, find the voltage gain, input resistance and output resistance. ($K=1\text{ mA/V}^2$; $V_{th}=2\text{V}$; $\lambda=0.001\text{V}^{-1}$)

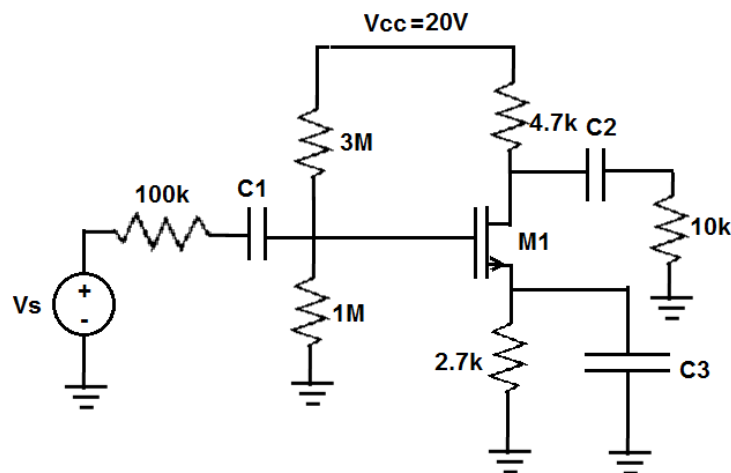


Figure 2