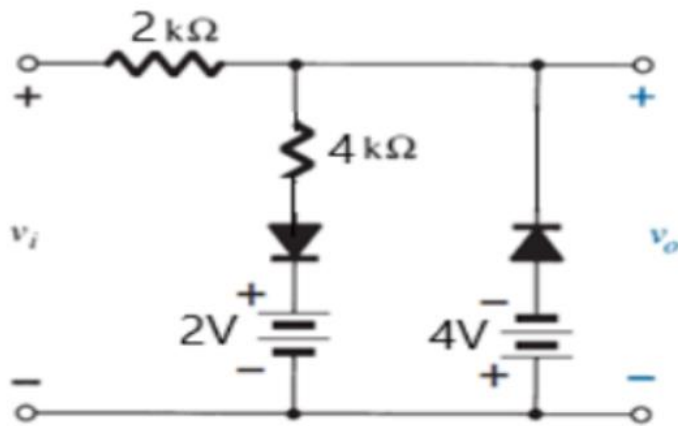


For the given circuit, diodes are assumed to be ideal.

Draw the output voltage waveform V_o as a function of time.

V_i is given as $10\sin(600t)$ volts.



For the given circuit:

$I_{DSS} = 5 \text{ mA}$, $V_p = -4 \text{ V}$, $V_D = 8 \text{ V}$, $V_S = 3,6 \text{ V}$

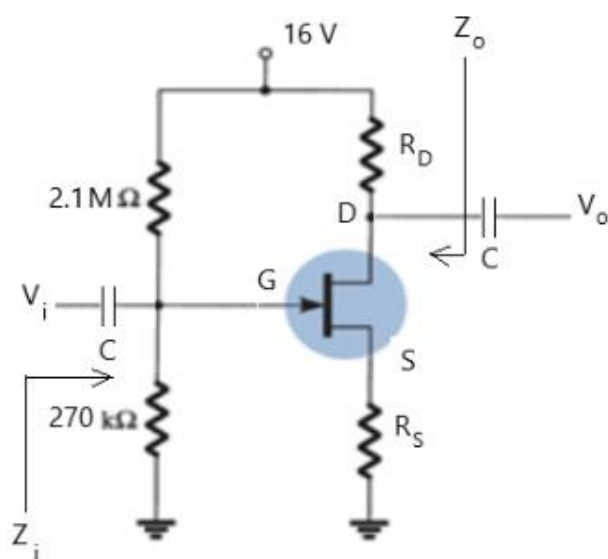
Calculate V_G and I_{DQ} .

Determine the values of R_D and R_S .

Find g_m .

Draw the small signal equivalent model and determine $A_v = \frac{V_o}{V_i}$

Calculate Z_i and Z_o .



For the given circuit; $\beta = 100$, $(1 + \beta) \cong \beta$, capacitors are short circuit in a.c.

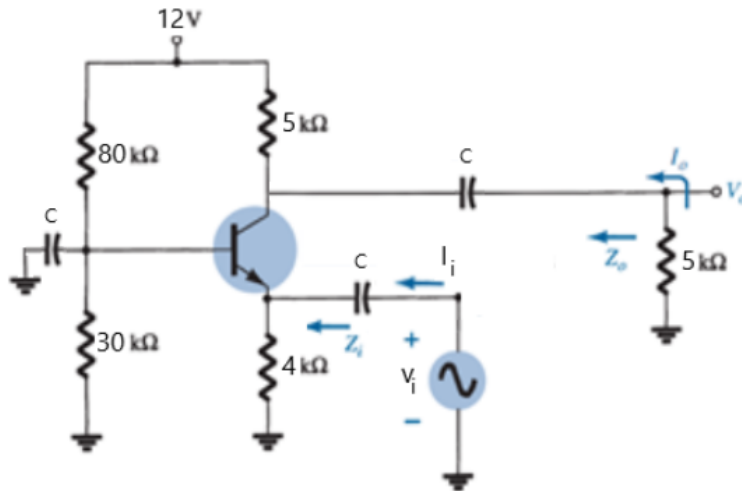
Determine V_{BQ} , I_{EQ} , I_{CQ} , V_{CEQ} .

Replace the circuit with the small signal r_e equiv. model, calculate r_e .

Determine $A_V = \frac{V_o}{V_i}$, $A_I = \frac{I_o}{I_i}$.

Calculate Z_i and Z_o .

What type of configuration is this network?



For the given circuit; $\beta = 120$, $r_o = \infty \Omega$, $(1 + \beta) \cong \beta$, capacitors are short circuit in the midband frequency region.

Calculate V_{BQ} , I_{EQ} , I_{CQ} , V_{CEQ} .

Replace the BJT with the r_e small signal equivalent model.

Find the voltage amplification factor $A_V = \frac{V_o}{V_i}$ in the midband region.

Find Z_i and Z_o .

Determine f_{LS} , f_{LC} , f_{LE} .

What is the lower cut-off frequency for this network? Explain your answer briefly.

