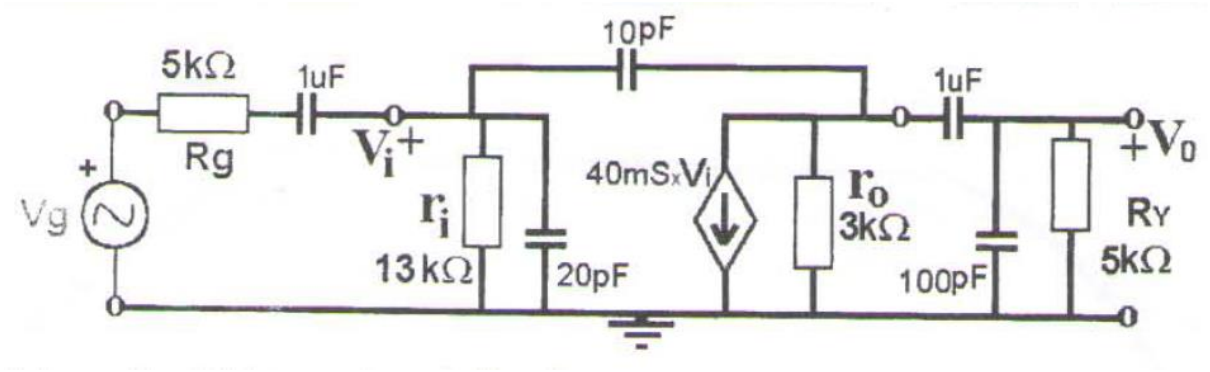
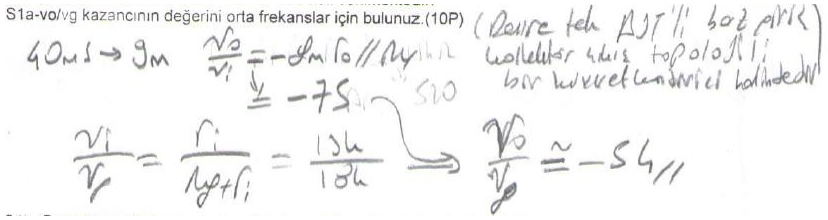
1-

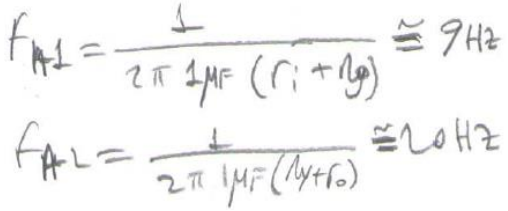


AC equivalent circuit of the amplifier is given above.

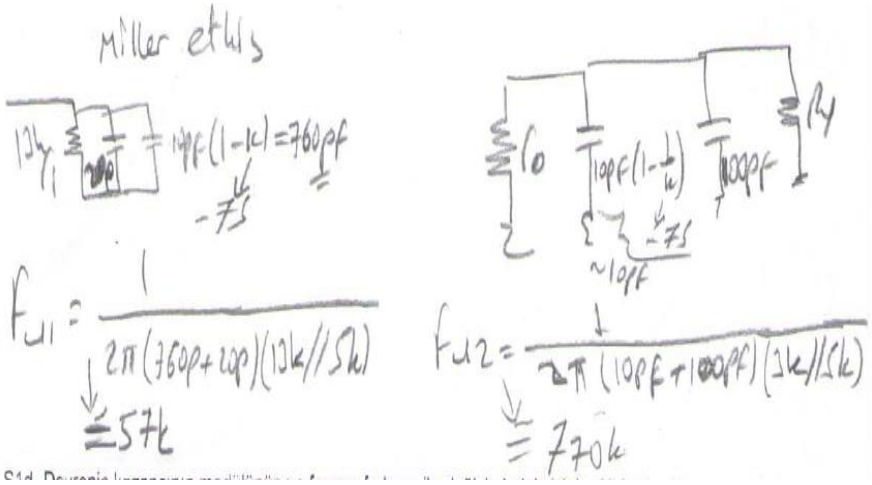
a. Calculate Vo/Vg for mid frequencies.



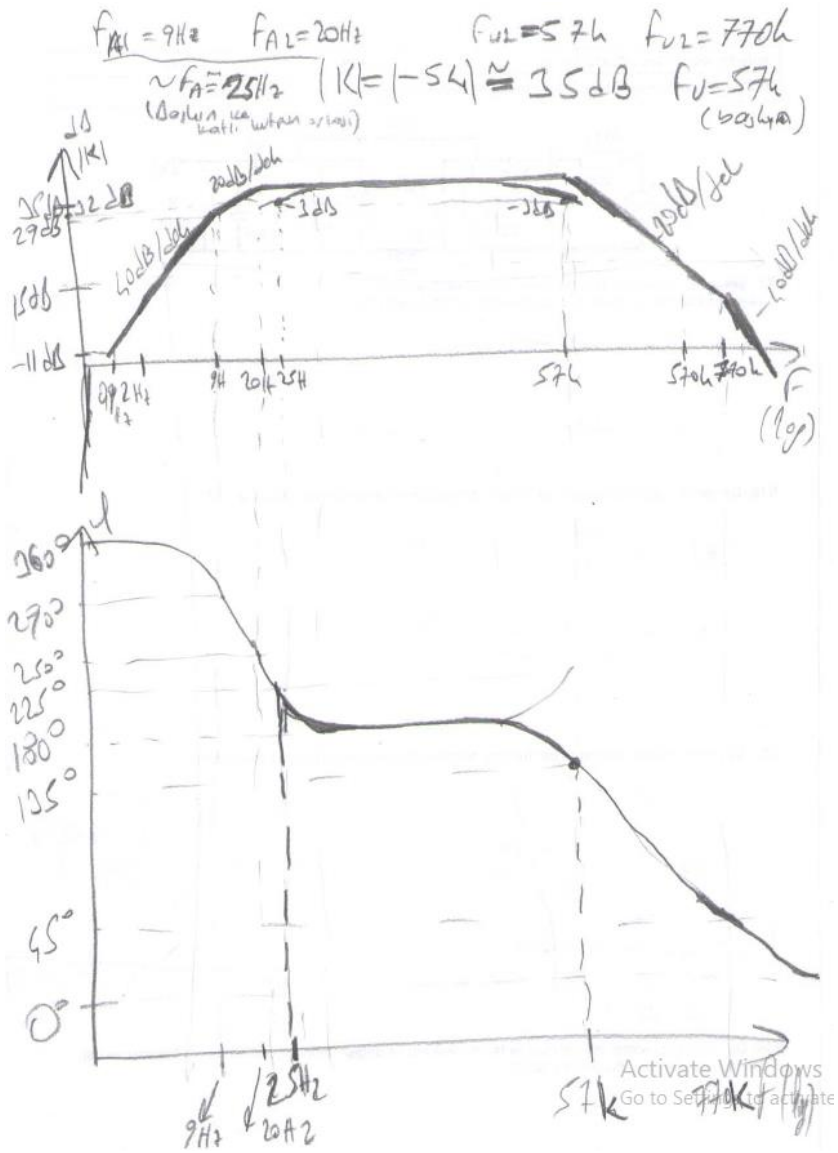
b. Calculate low frequency poles.



c. Calculate high frequency poles.



d. Draw Bode plots (both magnitude and phase). Show the low and high frequency cutoff frequencies.



2- For the BJTs in figure, βF=200, |VBE|=0.6 V, VT=25 mV, VA=∞. In quiescent condition Vi=0 V, VOQ=VC2Q=5 V.

a. Calculate R1 and R2 (ICQ1 = 0.2 mA)
b. Calculate Vo/Vi and high cutoff frequency of Vo/Vi (CE=100 uF)
c. Calculate high cutoff frequency (Ccb1=5 pF, Cbe1=30 pF, Ccb2=15 pF, Cbe2=60 pF)
d. Draw Bode plots (both magnitude and phase) of Vo/Vi.