Literature:

Biasing design: P 432 - 456

Assignments:

11.1:

Design an amplifier by using a BC547B transistor that can provide a voltage gain of $A_v = -50$. $R_S = 1\ K\Omega$, $R_L = 10\ K\Omega$, $V_{CC} = 15$ V and $v_{o,p} = 3$ V. In addition, we assume that $\beta = 300$, $V_{CE,sat} \leq 0.3$ V and $r_o \gg R_L$. Try to design the amplifier with lowest distortion for the given gain requirement.

Verify using LTspice gain and distortion for your design when fully equipped and optimize. If necessary, modify your design and verify again gain and distortion. 1kHz is used as test frequency.