1.) Question:- Do the AC analysis of the following circuit with C = 1600pF, C1 = 80pF, L1= 312.5mH and R= 1250 ohm. Fundamental frequency for FFT is same as source frequency.

1) Find the resonant frequencies.
2) Interpret the argument plot in terms of the behaviour of circuit(region for inductive and capacitive behaviour)
3) Find the overall impedance of the circuit using ltspice.
4) Find out the components which affects resonating frequencies.
5) Find the harmonic components and total harmonic distortion.
6) Find the power factor of the circuit.

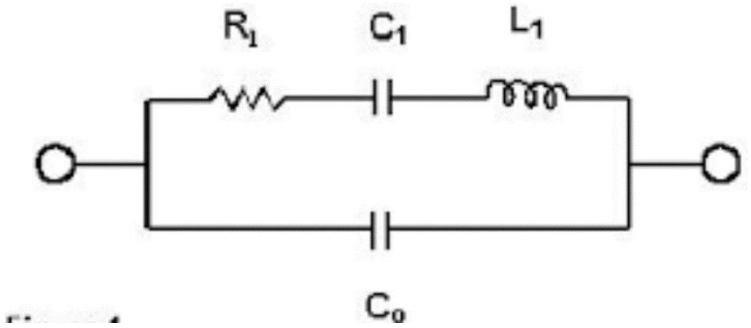

Fig Q1

2.) Design a common source amplifier which fulfills the following requirements,

a) Load should be PMOS.
b) Gain should be of 30 dB.
c) Unity gain bandwidth should be of 100 MHz.