

**Department
of
Electrical and Computer Engineering, UC.
EE - 352
ELECTRONICS II
SUMMER QUARTER 2010**

HOMEWORK ASSIGNMENT #3

Due April 21, 2010

Problem 9.33

A discreet MESFET common-source amplifier has $R_G=1\text{ M}\Omega$, $g_m=5\text{ mA/V}$, $r_o=100\text{ k}\Omega$, $C_{gs}=2\text{ pF}$ and $C_{gd}=0.4\text{ pF}$. The amplifier is fed with form a voltage source with an internal resistance of $500\text{ k}\Omega$ and is connected to a $10\text{ k}\Omega$ load. Find

- a) the overall midband gain A_M ,
- b) the upper 3-dB frequency f_H .
- c) Enter the circuit in a Spice program and check your answers for ω_L and ω_H with the calculated values.

The **Test #1** will be given on **Wednesday April 28**. It will cover the frequency response of MOSFET and BJT amplifiers.