

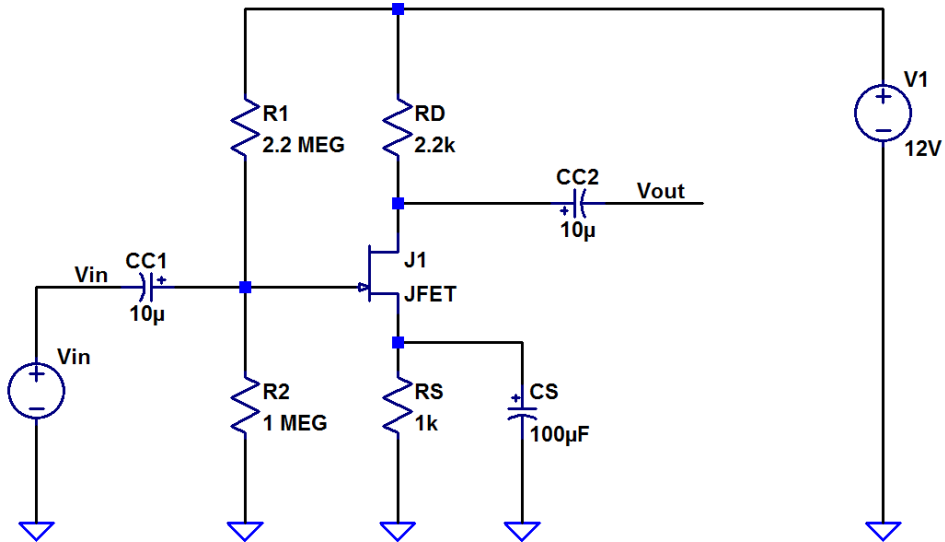
D. J. SANGHVI COLLEGE OF ENGINEERING
 DEPARTMENT OF ELECTRONICS ENGINEERING
 EXC402: DISCRETE ELECTRONIC CIRCUITS SEM IV
 B3 BATCH ASSIGNMENT 02

23rd March, 2017

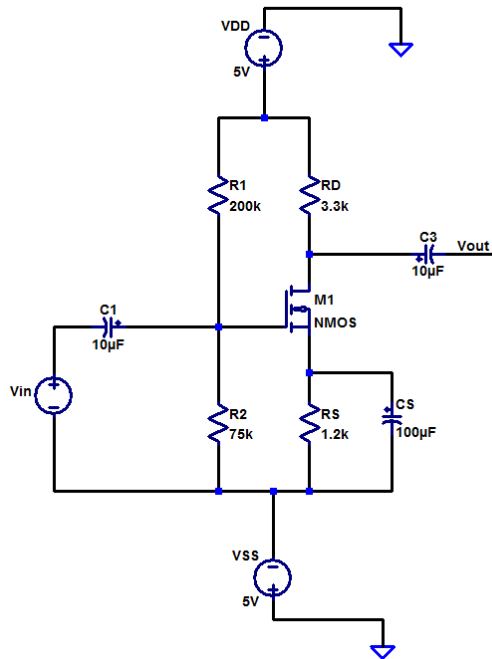
[Total Marks: 75]

1. Attempt all the questions.
2. Read the questions carefully before attempting.

1. For the given circuit, find I_{DQ} and V_{GSQ} and draw DC load line. Also state in which operating region circuit works. Hence find A_V , R_i and R_o
 Given: $I_{DSS} = 8mA$, $V_P = -3V$ [10]



2. For the given circuit, find V_{GSQ} , I_{DQ} and voltage gain A_V with C_S and without C_S
 Given: $V_T = 1V$, $k_n = 1mA/V^2$ [10]



3. Compare D-MOSFET and E-MOSFET considering construction and characteristics. [10]
4. What are different biasing methods used for FET. Explain self bias technique. [05]
5. What is use of negative feedback in amplifier? Draw block diagram of current shunt feedback amplifier and find R_{if} , R_{of} and gain with feedback. [10]
6. Design a self-bias JFET using zero temperature drift technique to provide $V_{DSQ} = 6V$ [10]
The JFET parameters are $I_{DSS} = 7mA$ and $V_P = -3V$
7. Draw circuit diagram of common-source amplifier with voltage divider bias with unbypassed source resistance R_S using D-MOSFET. Derive the expression for voltage gain, input resistance and output resistance. [10]
8. Explain the need for cascading of amplifiers. Explain CS-CE combination in detail. [10]
