



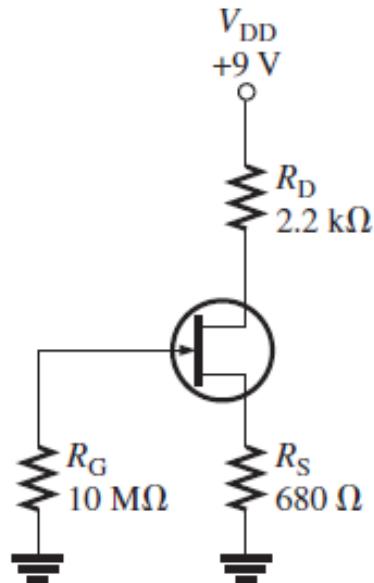
North South University

School of Engineering & Physical Sciences

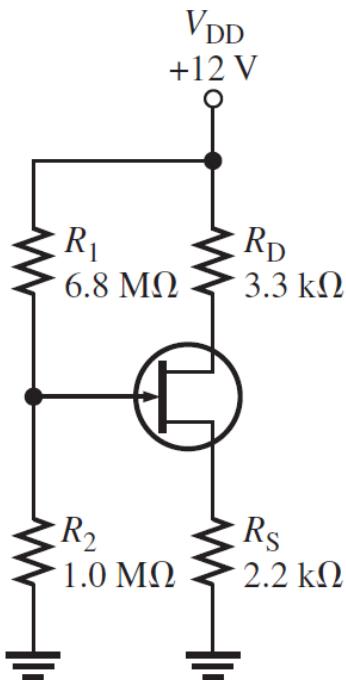
EEE 111/ ETE 111 Analog Electronics-I

Assignment-2 (Full marks-100)

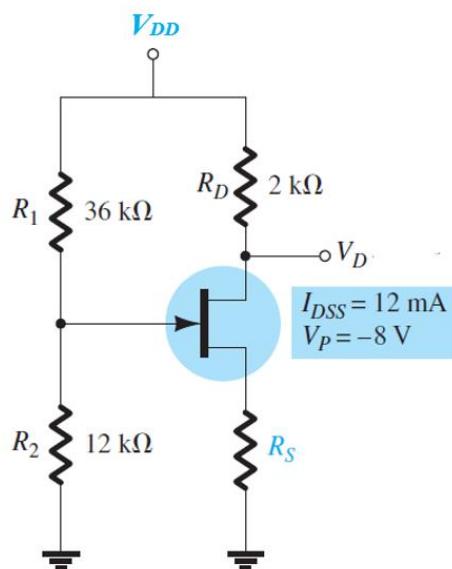
- Determine the approximate Q-point for the JFET shown in the following [CO1] [15] Figure. The particular device has a V_P of $-6V$ and $IDSS$ of $4mA$.



- Determine I_D and V_{GS} for the JFET with voltage-divider bias in the Figure [CO1] [15] below. Given that for this particular JFET, the parameter values are such that $V_D = 7V$.



3. Determine I_{DQ} and V_{GSQ} for the following network where the value of R_S = [CO1] [40]
 Sum of the digits of your student ID $\times 20$. Also, the value of V_{DD} =
 Sum of the digits of your student ID $\times \frac{2}{3}$. [Example: R_S for ID
 $2131951643 = (2 + 1 + 3 + 1 + 9 + 5 + 1 + 6 + 4 + 3) \times 20 =$
 700Ω ; $V_{DD} = (2 + 1 + 3 + 1 + 9 + 5 + 1 + 6 + 4 + 3) \times \frac{2}{3} =$
 $23.33 V$].



4. For the circuit shown in the Figure below, calculate the following-

[CO2] [30]

- i) r_e
- ii) Z_i (consider $r_o = \infty$)
- iii) Z_o (consider $r_o = \infty$)
- iv) A_v (consider $r_o = \infty$).
- v) Re-calculate Z_i , Z_o , and A_v , considering $r_o = 50 \text{ k}\Omega$.

