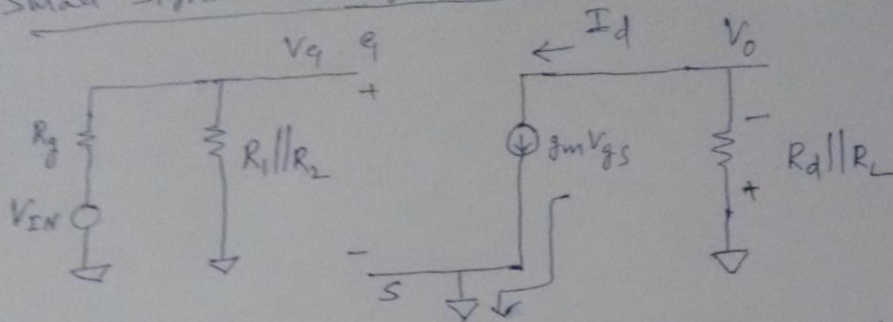


① Small Signal model of MOSFET

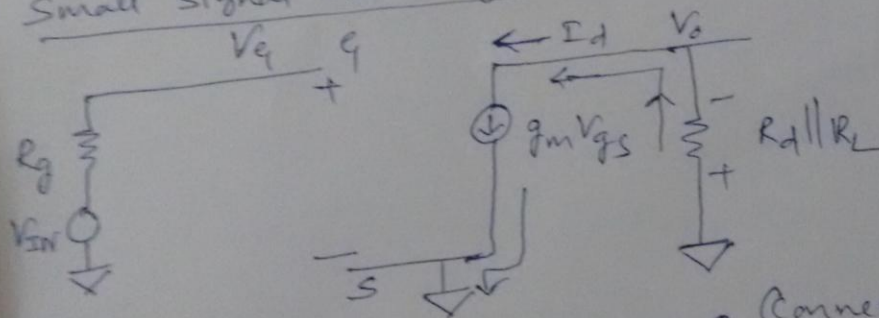


Define V_{gs} $V_{gs} = V_g - V_s$ (connected to zero ground)

$$V_g = \frac{V_{IN} (R_1 \parallel R_2)}{R_g + (R_1 \parallel R_2)}, \quad V_{gs} = \frac{V_{IN} (R_1 \parallel R_2)}{R_g + (R_1 \parallel R_2)} \quad (\text{using voltage divider circuit})$$

$$V_o = -I_d (R_d \parallel R_L)$$

② Small Signal model of MOSFET



Define V_{gs} $V_{gs} = V_g - V_s$ (connected to zero ground)

$$V_g = \frac{V_{IN}}{R_g} = ? \quad \text{or} \quad V_g = \frac{V_{IN} R_g}{R_g} = ?$$

$$V_{gs} = V_g$$