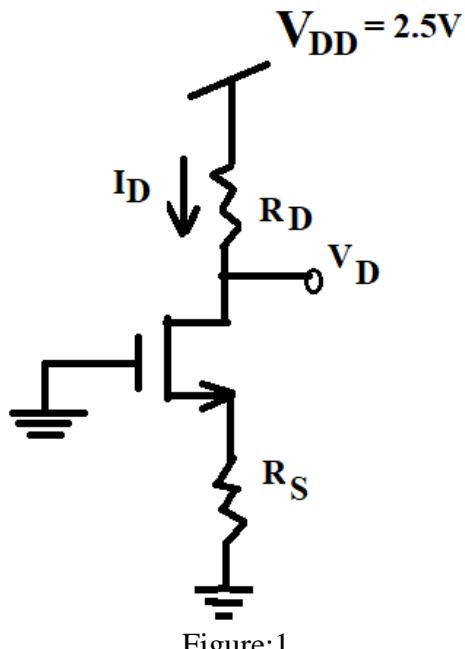


Tutorial No.07

- 1** Design the circuit of Fig.1 so that the transistor operates at $I_D=0.4\text{mA}$ and $V_D=0.5\text{V}$.The NMOS transistor has $V_{to}=0.7\text{V}$, $\mu_nC_{ox}=100\mu\text{A/V}^2$, $L=1\mu\text{m}$ and $W=32\mu\text{m}$. Neglect the channel length modulation($\lambda=0$).



- 2** Design the circuit in Fig.2 to obtain a current $I_D=80\mu\text{A}$.Find the value required for R, and find the dc voltage V_D . Let the NMOS transistor have $V_{to}=0.6\text{V}$, $\mu_nC_{ox}=200\mu\text{A/V}^2$, $L=0.8\mu\text{m}$ and $W=4\mu\text{m}$. Neglect the channel length modulation($\lambda=0$).

