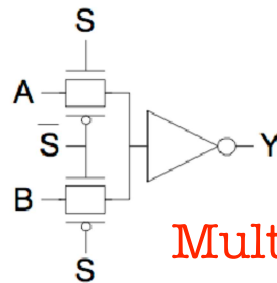
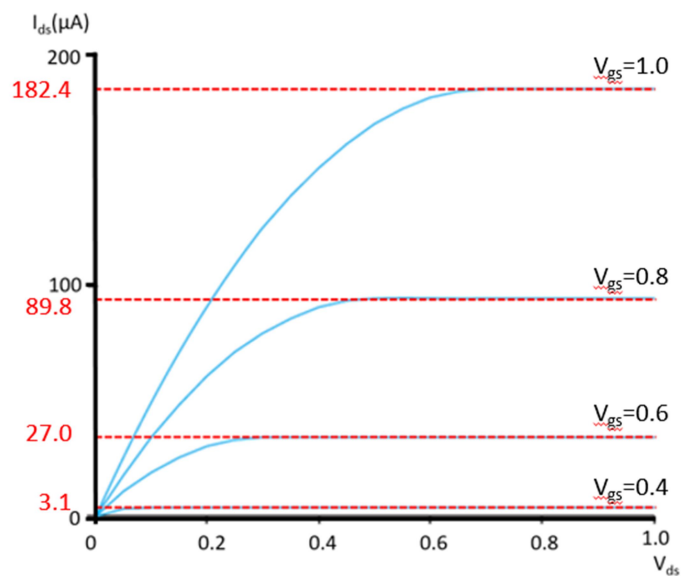


4. (20%) For the following transmission-gate circuit (see p. 3 for explanation of transmission gate)
- (a) If you want to compute $Y = \overline{E}F$, how do you set A, B, and S? **Explain why.**
- (b) If you want to compute $Y = E \oplus \overline{F}$, how do you set A, B, and S? **Explain why.**



Multiplexer

5. (20%) For the following I-V curves of an NMOS transistor, given the I_{sat} of all four curves, estimate a precise value of V_t (小數點以下兩位). Explain how you find this value from four I_{sat} .



TA：江子近，EE2-329

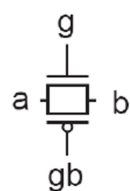
TA email: r06943159@ntu.edu.tw

HW1 Office hours: 10/08 19:00-21:00 @ 博理 214 室

Office hours: 10/11 19:00-21:00 @ 博理 214 室

If you have no time during the office hours, you can email TA to discuss another time for appointment.

■ Transmission Gate



(a)

$g = 0, gb = 1$



$g = 1, gb = 0$



(b)

Input

Output

$g = 1, gb = 0$

$0 \rightarrow \text{strong } 0$

$g = 1, gb = 0$

$1 \rightarrow \text{strong } 1$

(c)