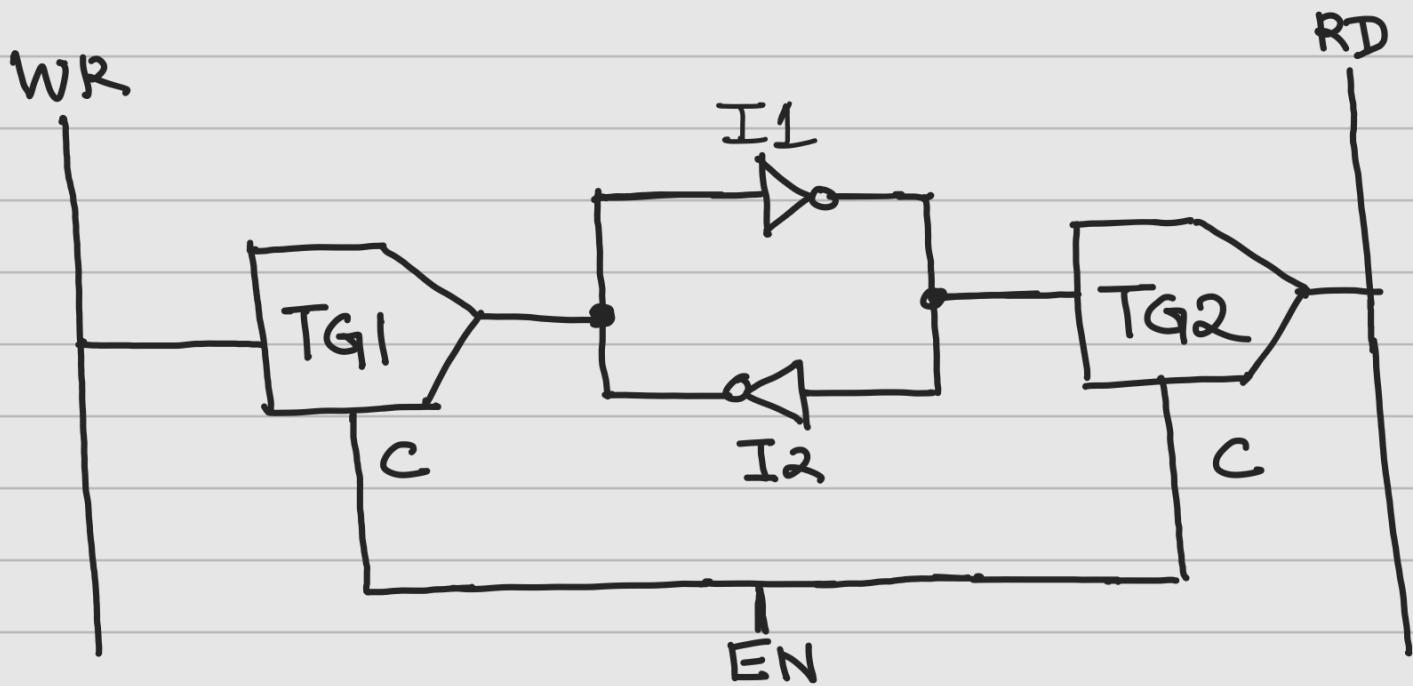


# SYMBOL - LEVEL SCHEMATIC ::



$TG_0, TG_1$  : Transmission Gates (TG)  
 $C$  : Control signal of TG  
 $WR$  : Write-Line  
 $RD$  : Read-Line  
 $EN$  : Write-enable

## \* Operation :-

Case - 1 :-  $EN = C = 1 \Rightarrow TG_1 = TG_2 = ON$

(a)  $WR = 1$  :

O/p of  $TG_1 = S-1$

O/p of  $I_1 = S-0$

O/p of  $TG_2 = RD = S-0$

(b)  $WR = 0$

O/p of  $TG_1 = S-0$

O/p of  $I_1 = S-1$

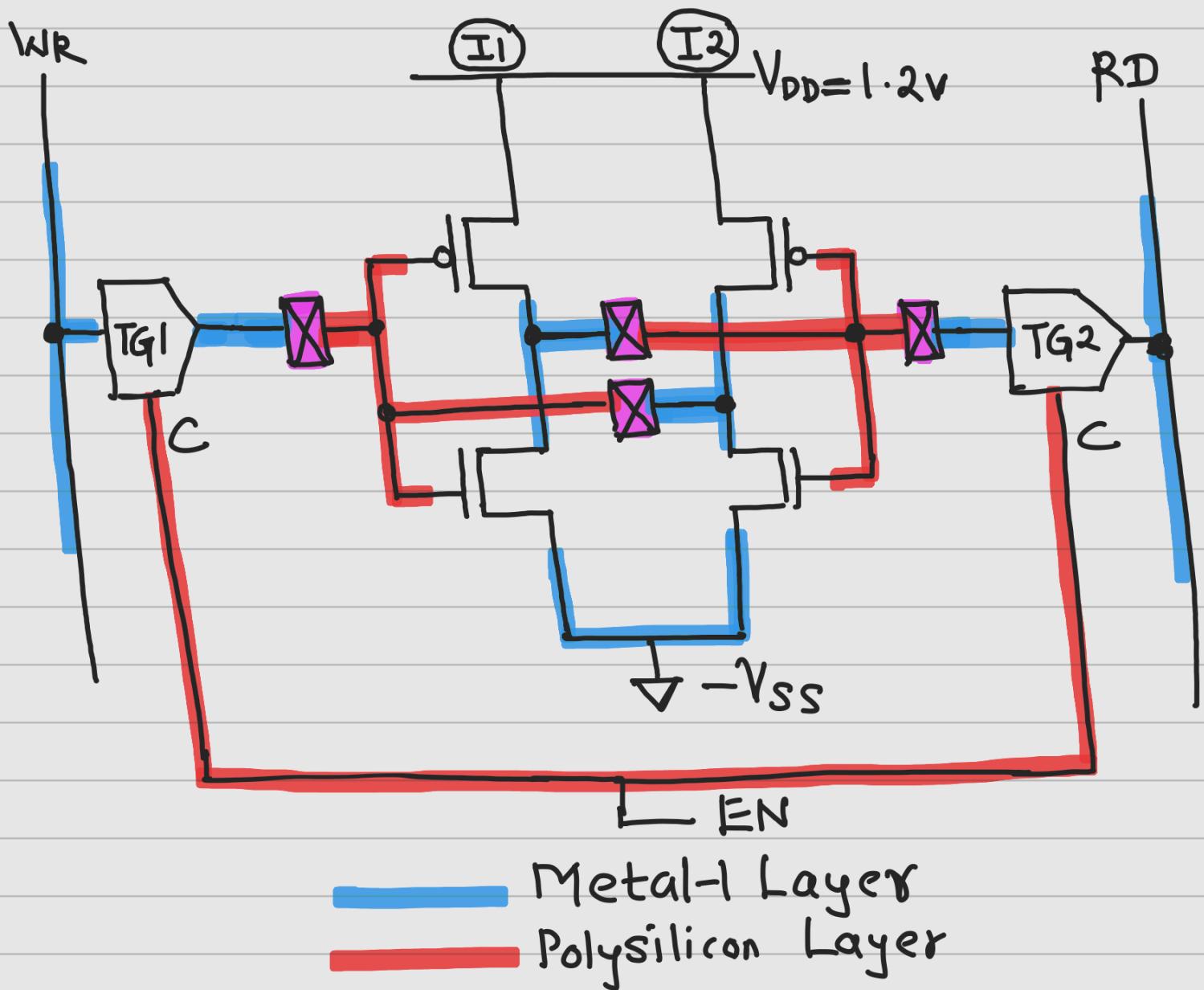
O/p of  $TG_2 = RD = S-1$

Case - 2 :-  $EN = C = 0 \Rightarrow TG_1 = TG_2 = OFF$

$RD$ - Line is disconnected from  $WR$  - line

$\therefore$  No CHARGE condition.

# (\*) MOSFET-level Schematic:-



$$(*) \frac{W_P}{L_P} = \left( \frac{500}{100} \right) \text{nm} = 5 = P$$

$$(*) \frac{W_N}{L_N} = \left( \frac{500}{100} \right) \text{nm} = 5 = n$$

$$(*) \frac{P}{n} = \frac{5}{5} = 1 \Rightarrow \text{Relative size.}$$