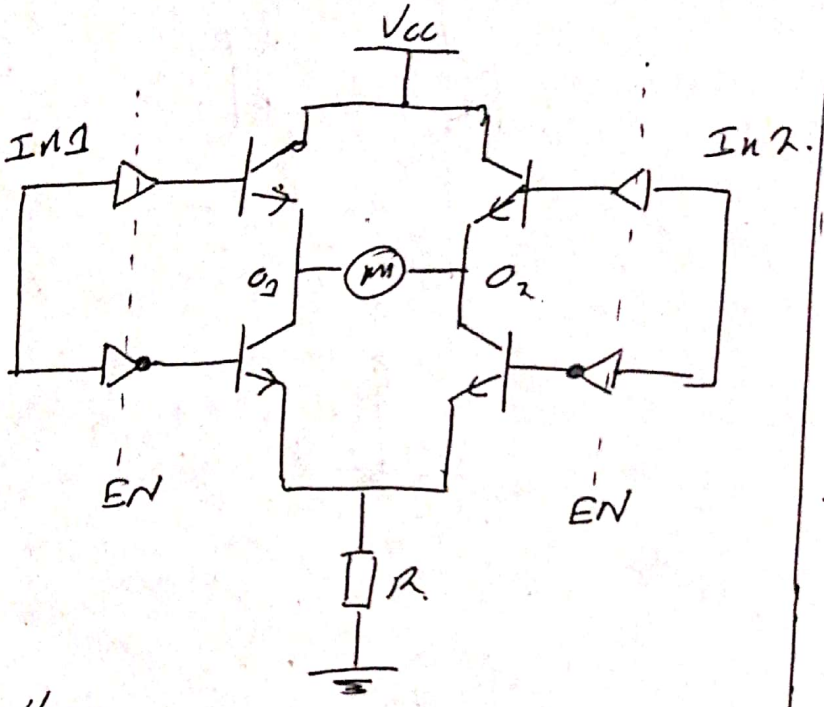
Assignment 03

190301 H

* A single H bridge can be represented as,



→ ~~For~~ this circuit I Assume thes BJTs are Si

→ Fwd BE ⇒ 0.7V

→ $V_{CE_{sat}}$ → 0.2 V

When one of In is High. KVL

$V_{CC} = 2 \times 0.2 + V_M + IR$

$\therefore V_M = (V_{CC} - IR - 0.4)$

* Since Motor is Not connected I → 0

* Consider 4.8V → logic 1 (5V)

0.2V → logic 0 (0V)

EN	In1	In2	out1	out2	
0	0	0	z	z	High Impedance state
0	0	1	z	z	
0	1	0	z	z	
0	1	1	z	z	
1	0	0	0	0	← Coasting
1	0	1	0	1	← current(I) flows out1 → out2
1	1	0	1	0	← Cur(I) flows out2 → out1
1	1	1	1	1	← Bracking
PWM	0	1	0	1	← I flows $O_1 \rightarrow O_2$ } with speed control
PWM	1	0	1	0	← I flows $O_2 \rightarrow O_1$ } with speed control