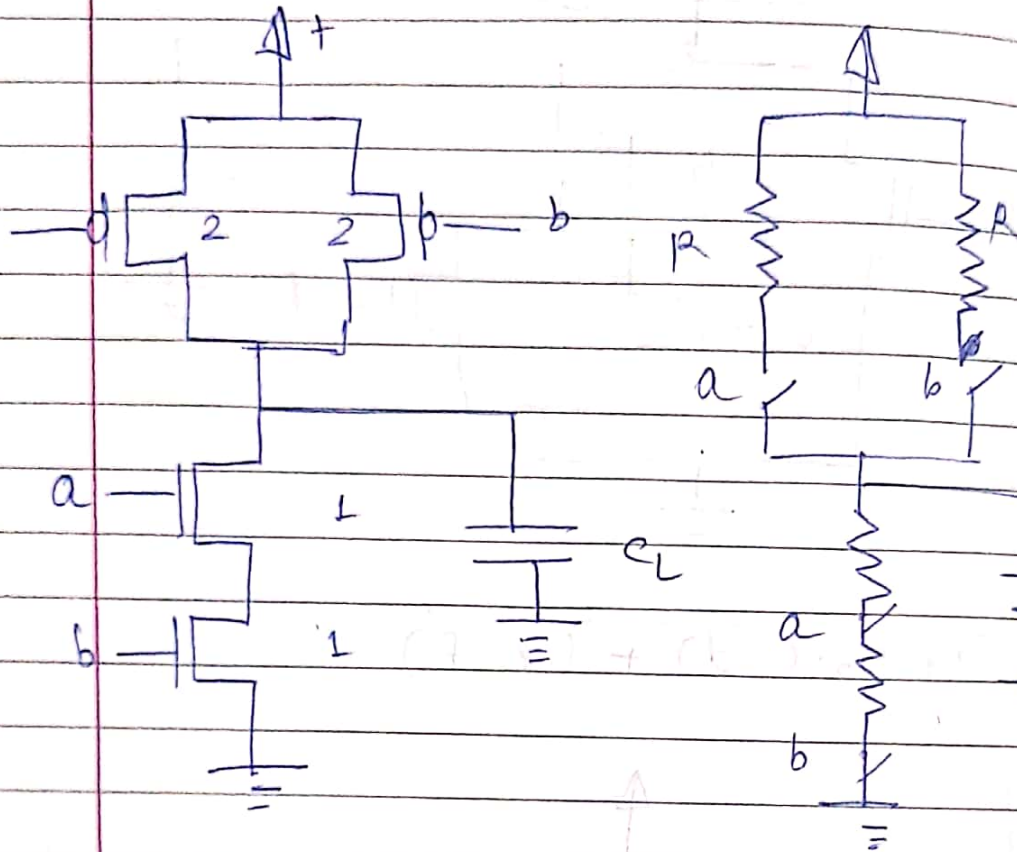
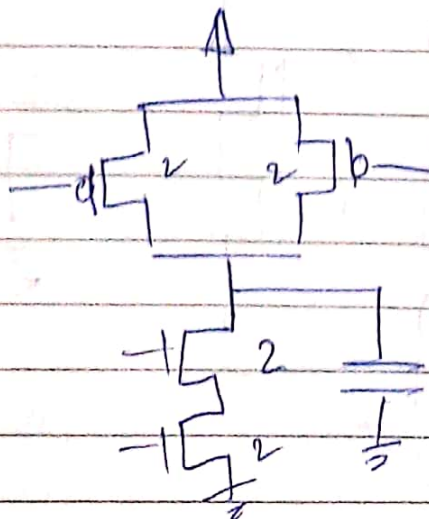


NAND



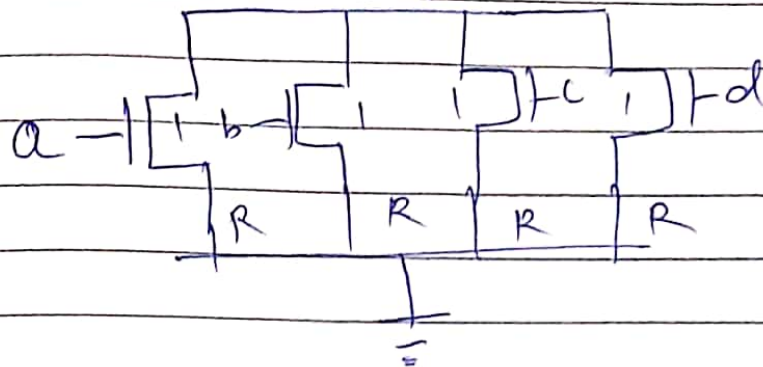
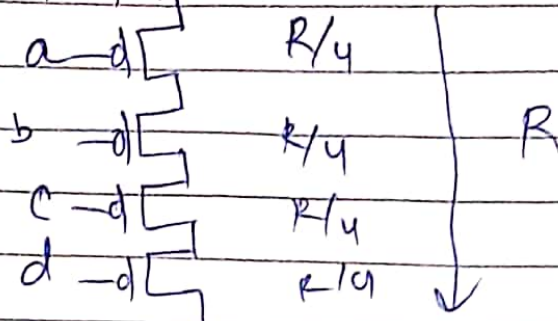
a	b	O/p		
0	1	R/2 1	R/2	PUN = Inv PUN
0	1	1	R	
1	0	1	R	
1	1	0	2R	Double as comp. to



1. ~~the~~ width of NMOS = R
 2. width of PMOS = R

M	T	W	T	F	S	S
Page No.:						YOUVA
Date:						

Q. $f = a + b + c + d$

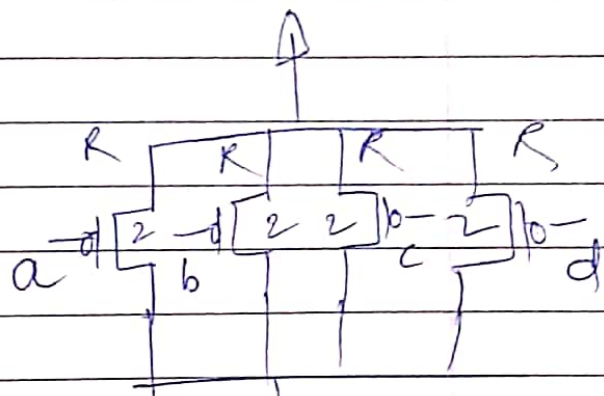


0	0	0	0	↓	4R	<u>PUN</u>
0	0	0	1		$R, \frac{R}{2}, \frac{R}{3}, \frac{R}{4}$	

PDN worstcase = CMOS inv.

$R \rightarrow 2$
 $R/4 \rightarrow 8$

Q. $f = a \cdot b \cdot c \cdot d$



				O/P	
0	0	0	0	↓	$R/4, R/3, R/2$
0	0	0	1		R
1	1	1	1	0	4R

