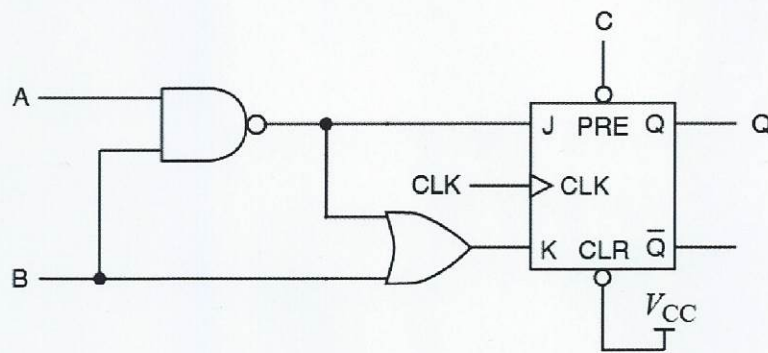


Ex:

A truth-table, circuit, and timing diagram are shown below. Fill in the missing waveform for Q in the timing diagram. Draw your answer directly on the timing diagram.

FLIP-FLOP TRUTH TABLE							
$\overline{\text{PRE}}$	$\overline{\text{CLR}}$	CLK	J	K	Q	$\overline{\text{Q}}$	MODE
0	1	X	X	X	1	0	Preset
1	0	X	X	X	0	1	Clear
0	0	X	X	X	-	-	not used
1	1	$\uparrow$	0	0	Q	$\overline{\text{Q}}$	Hold
1	1	$\uparrow$	0	1	0	1	Reset
1	1	$\uparrow$	1	0	1	0	Set
1	1	$\uparrow$	1	1	$\overline{\text{Q}}$	Q	Toggle
1	1	not $\uparrow$	X	X	Q	$\overline{\text{Q}}$	Hold



sol'n; Make a truth table for J and K

A	B	J	K	
0	0	1	1	Toggle
0	1	1	1	Toggle
1	0	1	1	Toggle
1	1	0	1	Reset

