

## ASYNCHRONOUS COUNTER DESIGN AND MOD-N COUNTER

**Aim:** - Realization of 3-bit Asynchronous counter and Mod-N counter design .

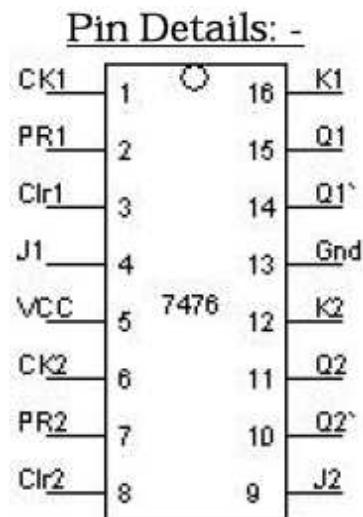
**Apparatus Required:** -

IC 7408, IC 7476, IC 7400, IC 7432 etc.

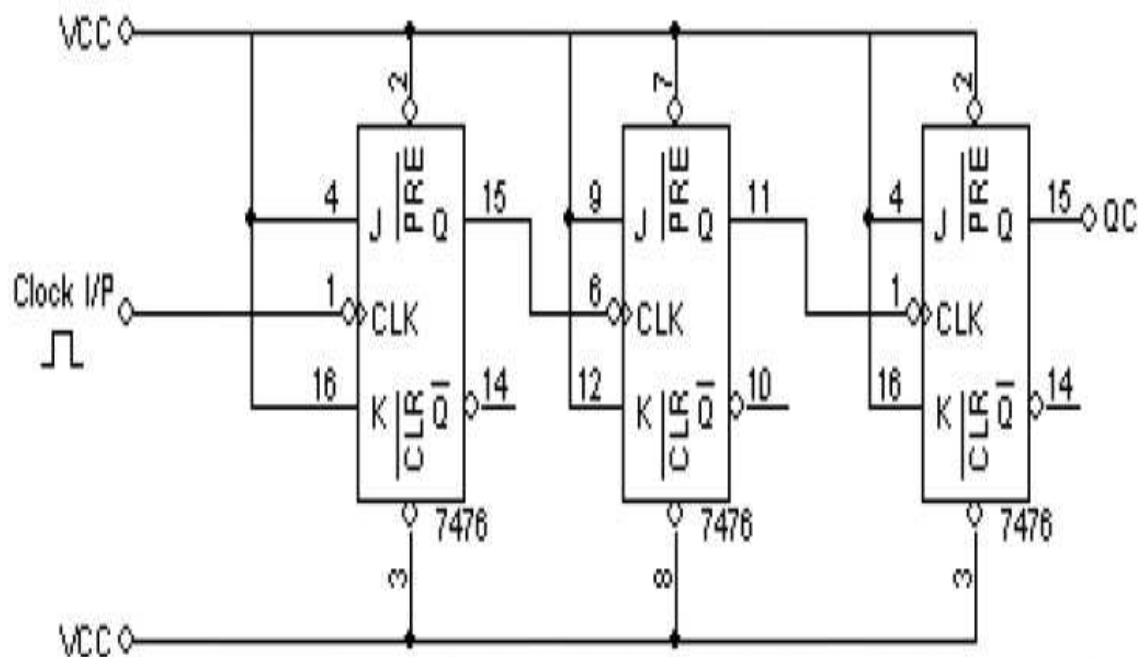
**Procedure:** -

1. Connections are made as per circuit diagram.
2. Clock pulses are applied one by one at the clock I/P and the O/P is observed at QA, QB & QC for IC 7476.
3. Verify the Truth table .

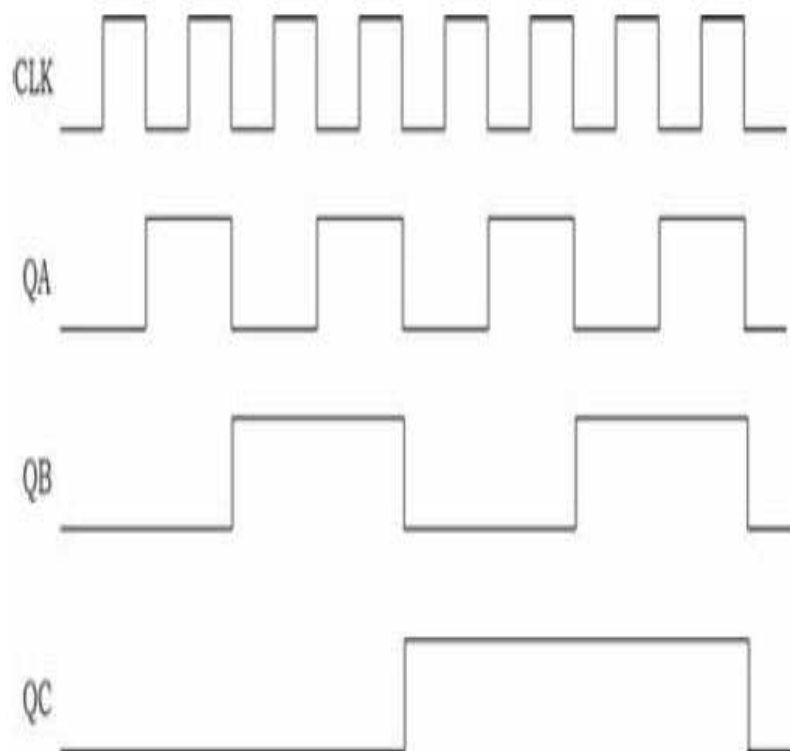
**Circuit Diagram:**



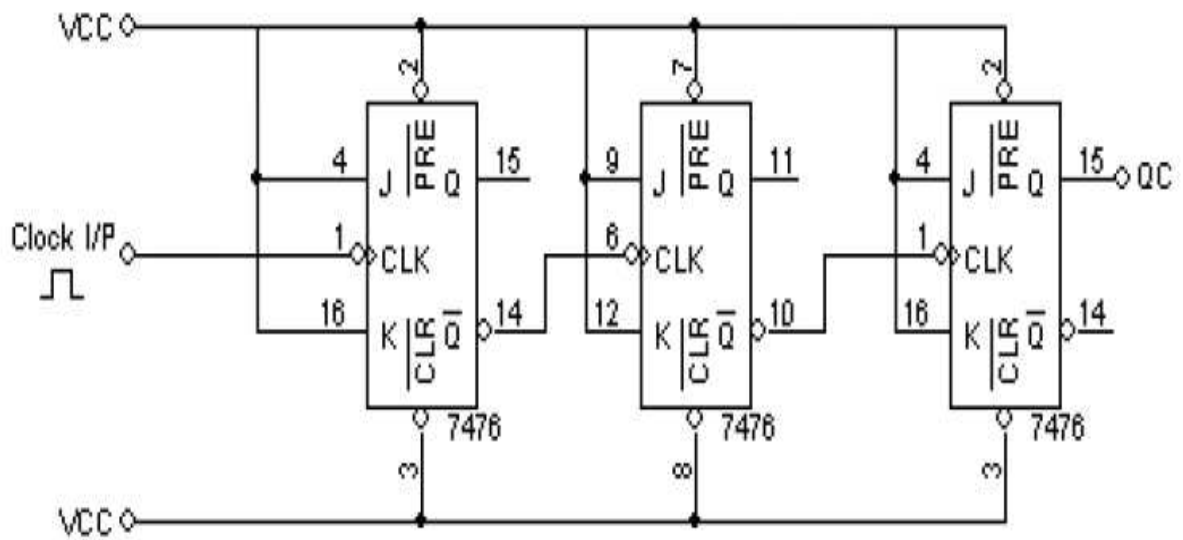
### Circuit Diagram: - 3-Bit Asynchronous Up Counter



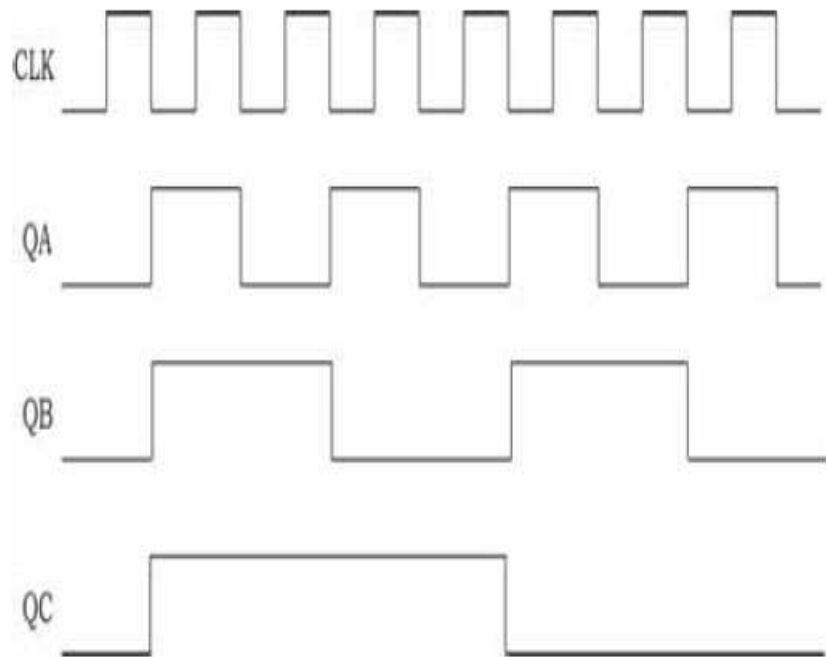
3-bit Asynchronous up counter			
Clock	QC	QB	QA
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1
8	0	0	0



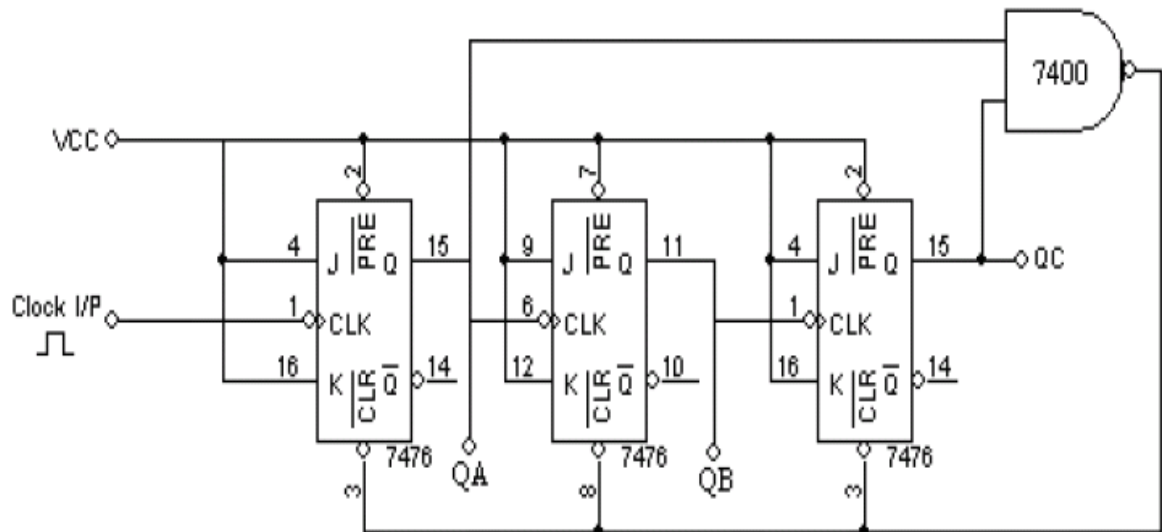
### Circuit Diagram: - 3-Bit Asynchronous Down Counter



3-bit Asynchronous down counter			
Clock	QC	QB	QA
0	1	1	1
1	1	1	0
2	1	0	1
3	1	0	0
4	0	1	1
5	0	1	0
6	0	0	1
7	0	0	0
8	1	1	1
9	1	1	0



### Mod 5 Asynchronous Counter:-



Mod 5 Asynchronous counter			
Clock	QC	QB	QA
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	0	0	0

