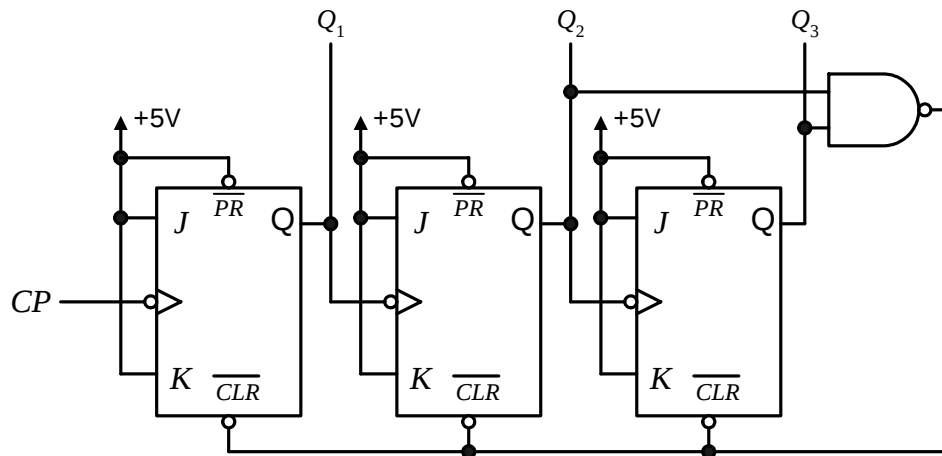


, ,

(Problem Solutions of Chapter 10)

1. 6

6 1 6
 Clear . 6 (Clear,
 Preset) 3 . J-K , Toggle
 J K +5V , Preset
 +5V . , 6 000, 001,
 010, 011, 100, 101 110 가
 Clear .



2.

5 , 8 , 10
 가 1MHz 2.5KHz .

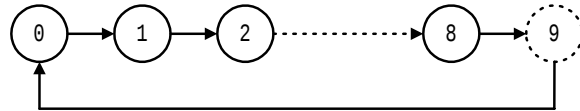
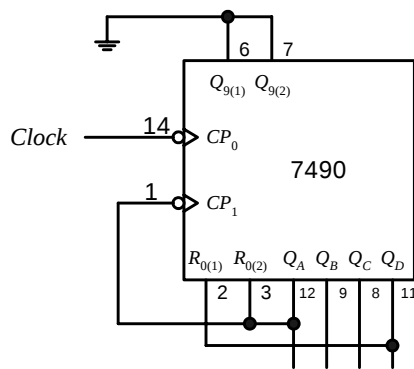
$$\frac{10^6}{5 \times 8 \times 10} = 2500Hz = 2.5kHz$$

5 , 16 가 1MHz
 12.5KHz .

$$\frac{10^6}{5 \times 16} = 12500Hz = 12.5kHz$$

3. 7490 9

Q₀ CP₁ 10 . 6 7 Q₉₍₁₎
 Q₉₍₂₎ 0V . 가 1001(9) Clear Q₃
 Q₀ 2 3 R₀₍₁₎ R₀₍₂₎ .



4. 74160

9

16-9=7

(6, 5, 4, 3) DCBA=0111

가

1111

Load

CO

(15

)

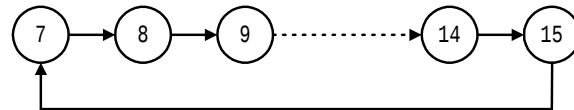
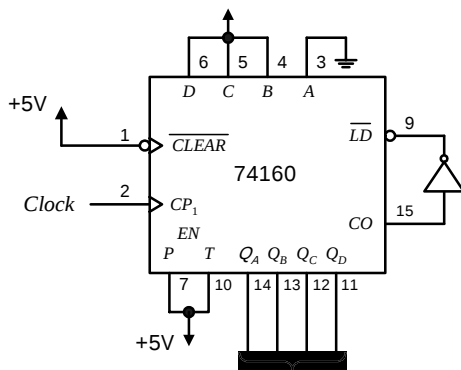
9

$\overline{LOAD}$

. 1

$\overline{CLEAR}$

+5V



5. 7493

13

12

QA

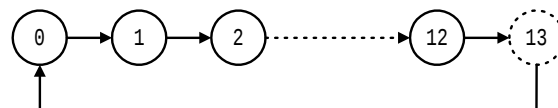
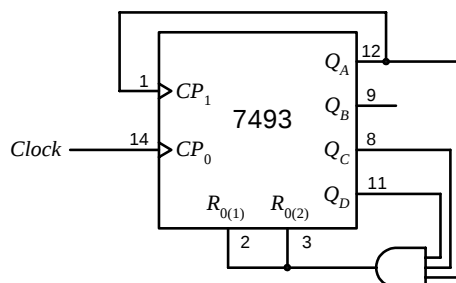
CP1

16

가

$Q_D Q_C Q_B Q_A = 1101(13)$

Clear



6. 74161 2

121

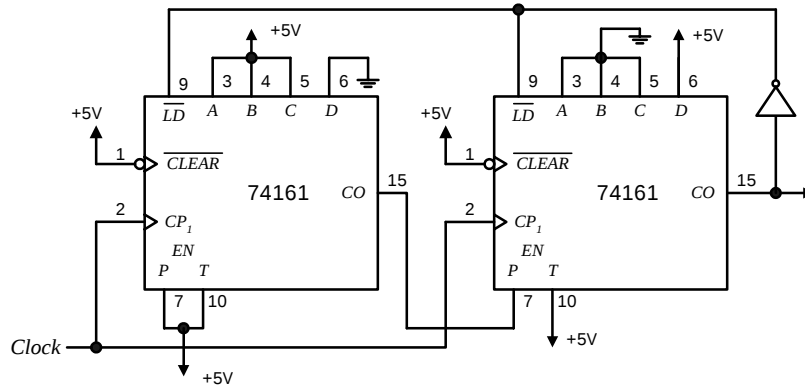
가

1

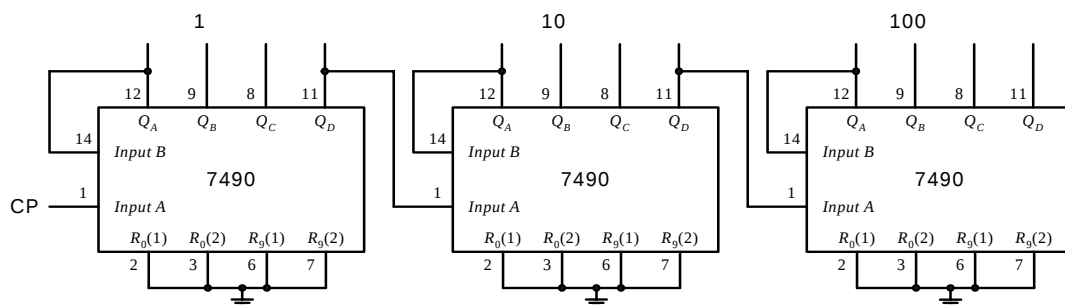
CO

2

ENP , ENT +5V . 16
 1 CO 가 2 1 가
 . 2 CO 16×16=256 가
 . 256 121 2
 CO $\overline{LOAD}$. 121 256 - 121 = 135
 10000111(=135) .



7. 7490 3 000 999



8. 7490

7490 2 5 가 10Hz
 1Hz .



0 0 1 0	0 1 0 1
0 1 0 0	1 0 0 1
0 1 0 1	1 0 1 1
0 1 1 0	1 1 0 1
1 0 0 1	0 0 1 0
1 0 1 0	0 1 0 0
1 0 1 1	0 1 1 0
1 1 0 1	1 0 1 0

0101 0010 가 0101 ,
 1011 . 1011
 0100가 .

11. 10

9 10 J-K .

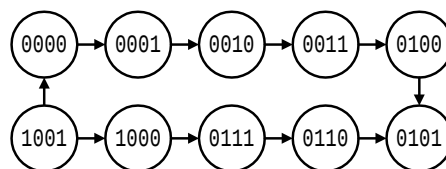
12.

100nsec 10nsec 10
 . 100nsec , 가
 5MHz .

$$\frac{1}{100 \times 10^{-9}} = 10 \times 10^6 \text{ Hz} = 10 \text{ MHz}$$

13. BCD (T)

(1) BCD



(2) BCD

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	T_A	T_B	T_C	T_D
0	0	0	0	0	0	0	1	0	0	0	1
0	0	0	1	0	0	1	0	0	0	1	1
0	0	1	0	0	0	1	1	0	0	0	1
0	0	1	1	0	1	0	0	0	1	1	1
0	1	0	0	0	1	0	1	0	0	0	1
0	1	0	1	0	1	1	0	0	0	1	1
0	1	1	0	0	1	1	1	0	0	0	1
0	1	1	1	1	0	0	0	1	1	1	1
1	0	0	0	1	0	0	1	0	0	0	1
1	0	0	1	0	0	0	0	1	0	0	1

<i>CD</i>	<i>AB</i>	00	01	11	10
00					
01				1	
11	X	X	X	X	X
10		1	X	X	X

$$T_A = AD + BCD$$

<i>CD</i>	<i>AB</i>	00	01	11	10
00				1	
01				1	
11	X	X	X	X	X
10				X	X

$$T_B = CD$$

<i>CD</i>	<i>AB</i>	00	01	11	10
00			1	1	
01			1	1	
11	X	X	X	X	X
10				X	X

$$T_C = \bar{A}D$$

<i>CD</i>	<i>AB</i>	00	01	11	10
00	1	1	1	1	
01	1	1	1	1	
11	X	X	X	X	X
10	1	1	X	X	X

$$T_D = 1$$

14. 0 64

4

2

(Q_1, Q_2, Q_3, Q_4)

$\div 2, \div 4, \div 8, \div 16$

.

4

2

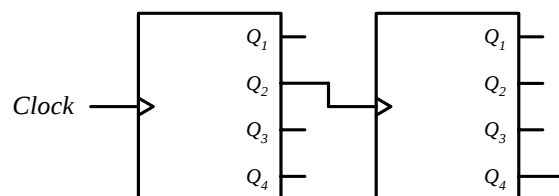
2

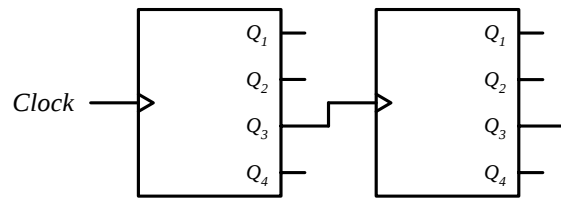
64

"4 × 16"

"8 × 8"

.





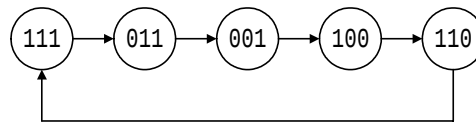
15.

5

10MHz

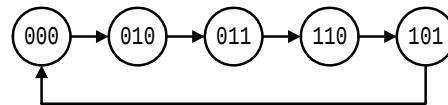
2MHZ

16.



17.

(1)



(2)

