

Q.1

Even counter

0-2-4-6-8-10-12-14 using JK f/f.

$$2^n \geq 14 \rightarrow 2^4 \geq 14 \rightarrow 16 \geq 14$$

No. of f/f's 4 JK f/f.

P.S				A.S				J _D K _D		J _C K _C		J _B K _B		J _A K _A	
Q _D	Q _C	Q _B	Q _A	Q _D ⁺	Q _C ⁺	Q _B ⁺	Q _A ⁺								
0	0	0	0	0	0	1	0	0	X	0	X	1	X	0	X
0	0	0	1	X	X	X	X	X	X	X	X	X	X	X	X
0	0	1	0	0	1	0	0	0	X	1	1	X	0	0	X
0	0	1	1	X	X	X	X	X	X	X	X	X	X	X	X
0	1	0	0	0	1	1	0	0	X	X	X	1	X	0	X
0	1	0	1	X	X	X	X	X	X	X	X	X	X	X	X
0	1	1	0	1	0	0	0	1	X	X	1	X	1	0	X
0	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
1	0	0	0	1	0	1	0	X	0	0	X	0	X	0	X
1	0	0	1	X	X	X	X	X	X	X	X	X	X	X	X
1	0	1	0	1	1	0	0	X	0	1	X	X	0	0	X
1	0	1	1	X	X	X	X	X	X	X	X	X	X	X	X
1	1	0	0	1	1	1	0	X	0	X	0	1	X	0	X
1	1	0	1	X	X	X	X	X	X	X	X	X	X	X	X
1	1	1	0	0	0	0	0	X	1	X	1	X	1	0	X
1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X

Q_D Q_C Q_B Q_A

00	0	X	X	1
01	X	X	X	X
11	X	X	X	X
10	0	X	X	1

Q_D Q_C Q_B Q_A

Q_D Q_C Q_B Q_A

00	X	X	X	X
01	0	X	X	1
11	0	X	X	1
10	X	X	X	X

Q_D Q_C Q_B Q_A

JC =

KC

Q_D Q_C Q_B Q_A

