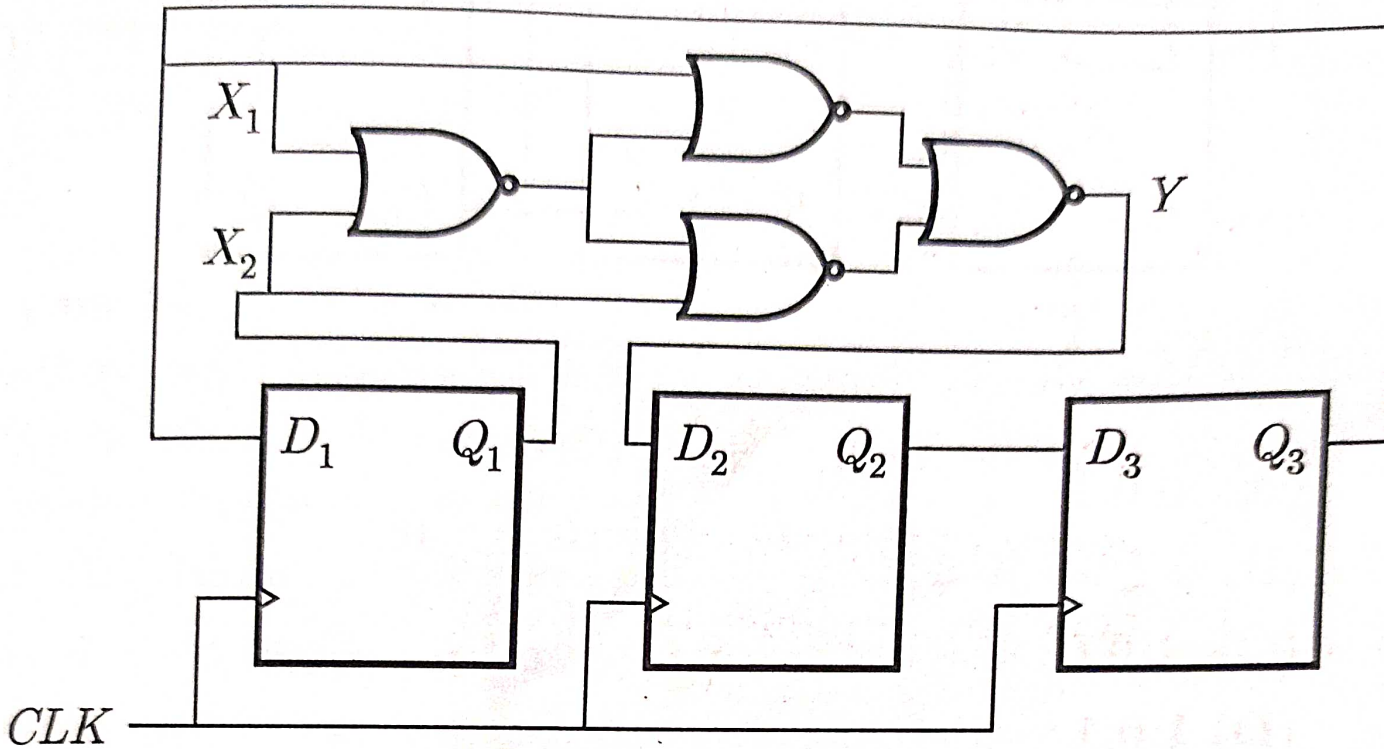
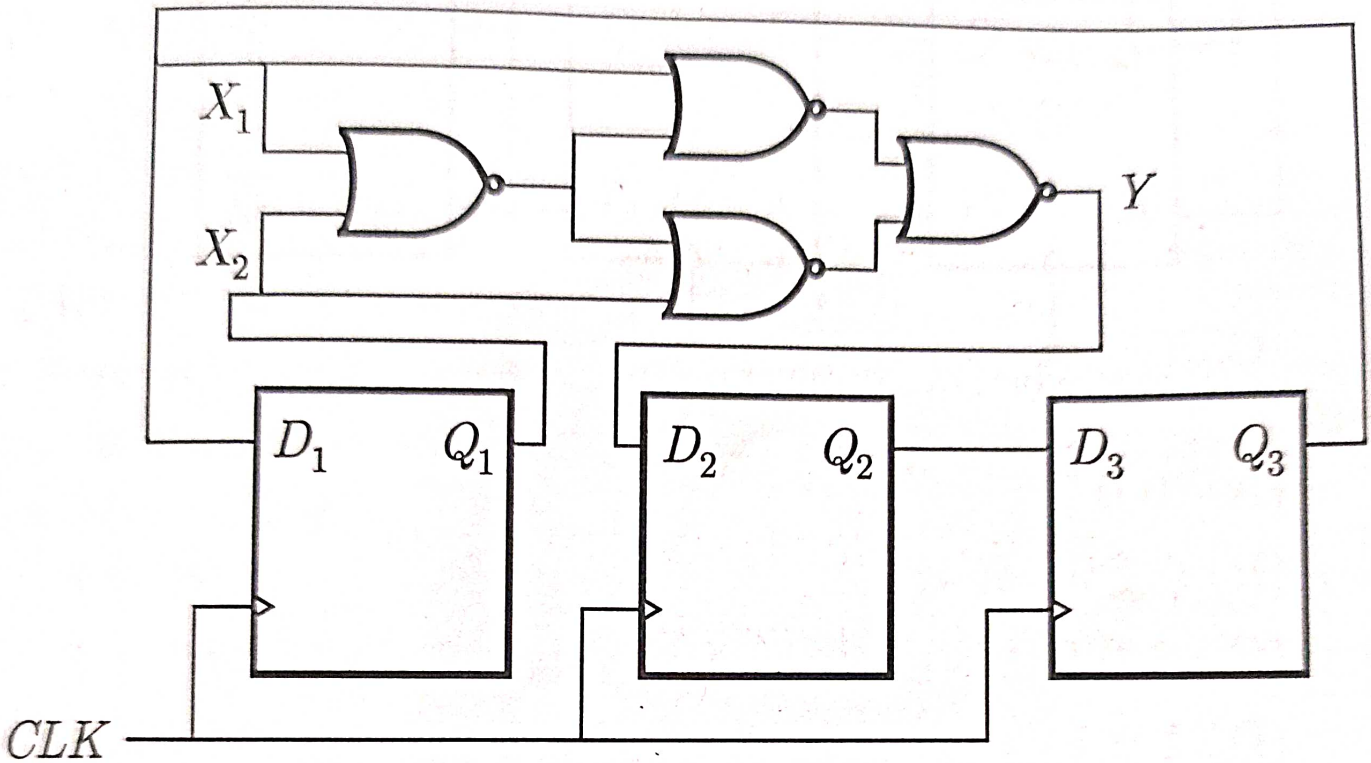
Common Data For Q. 25 and 26 :

Consider the circuit shown in following figure.



Common Data For Q. 25 and 26 :

Consider the circuit shown in following figure.



MCQ 5.1.25 The correct input output relationship between Y and (X_1, X_2) is

(A) $Y = X_1 + X_2$

(B) $Y = X_1 X_2$

(C) $Y = X_1 \oplus X_2$

(D) $Y = \overline{X_1 \oplus X_2}$

MCQ 5.1.26 The D flip-flop are initialized to $Q_1 Q_2 Q_3 = 000$. After 1 clock cycle, $Q_1 Q_2 Q_3$ is equal to

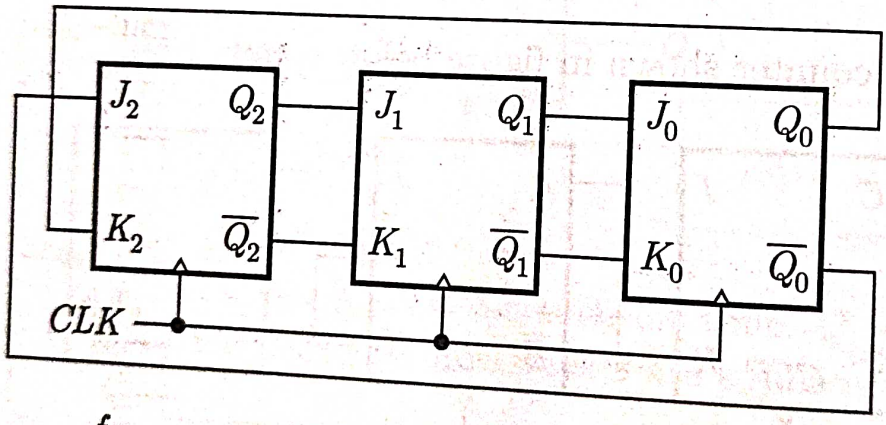
(A) 011

(B) 010

(C) 100

(D) 101

MCQ 5.1.27 The three-stage Johnson counter as shown in figure below is clocked at a constant frequency of f_c from the starting state of $Q_2 Q_1 Q_0 = 101$. The frequency of output $Q_2 Q_1 Q_0$ will be



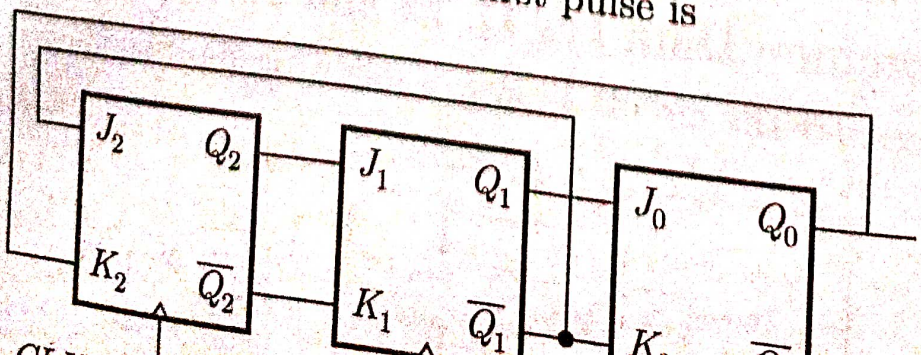
(A) $\frac{f_c}{8}$

(B) $\frac{f_c}{6}$

(C) $\frac{f_c}{3}$

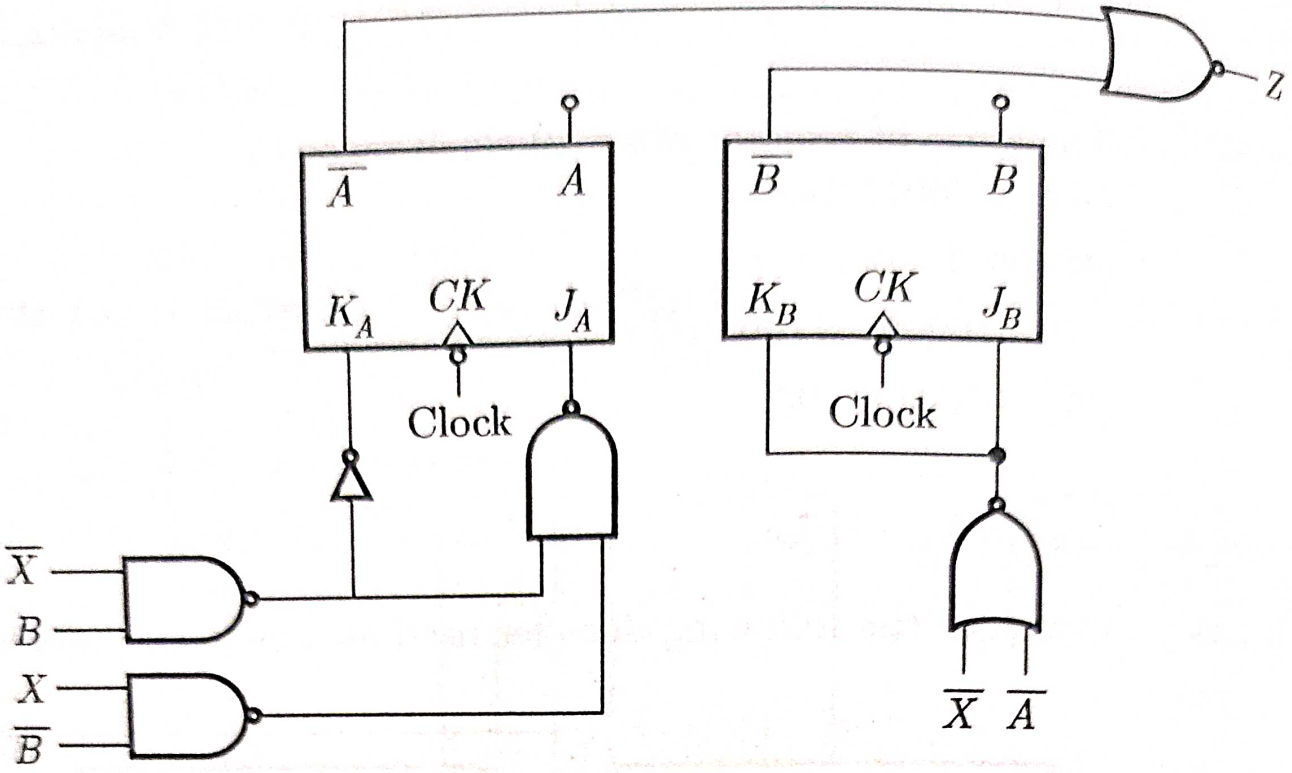
(D) $\frac{f_c}{2}$

MCQ 5.1.28 The counter shown in the figure below has initially $Q_2 Q_1 Q_0 = 000$. The status of $Q_2 Q_1 Q_0$ after the first pulse is



Common Data For Q. 43 and 45:

Consider the following sequential circuit.



Q 5.1.44 For the given sequential circuit, the next state equations for flip-flop A and B are

(A) $A^+ = A(B' + X) + A'(BX' + B'X)$ and $B^+ = AB'X + B(A' + X')$

(B) $A^+ = A(B'X) + A'(BX' + B'X)$ and $B^+ = A(B' + X) + B(A'X')$

(C) $A^+ = A(B'X) + A'(BX')$ and $B^+ = A(B'X) + B(A'X')$

(D) $A^+ = A(B' + X) + A'(BX' + B'X)$ and $B^+ = A'X + B'X'A'$

MCQ 5.1.45 Which of the following represents correct output sequence, when input sequence is $X = 01100$?

(A) 01100

(B) 00101

(C) 10100

(D) 00110

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