ASSIGNMENT 11

Presentation On State Transition Diagram

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January 7, 2021

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Question

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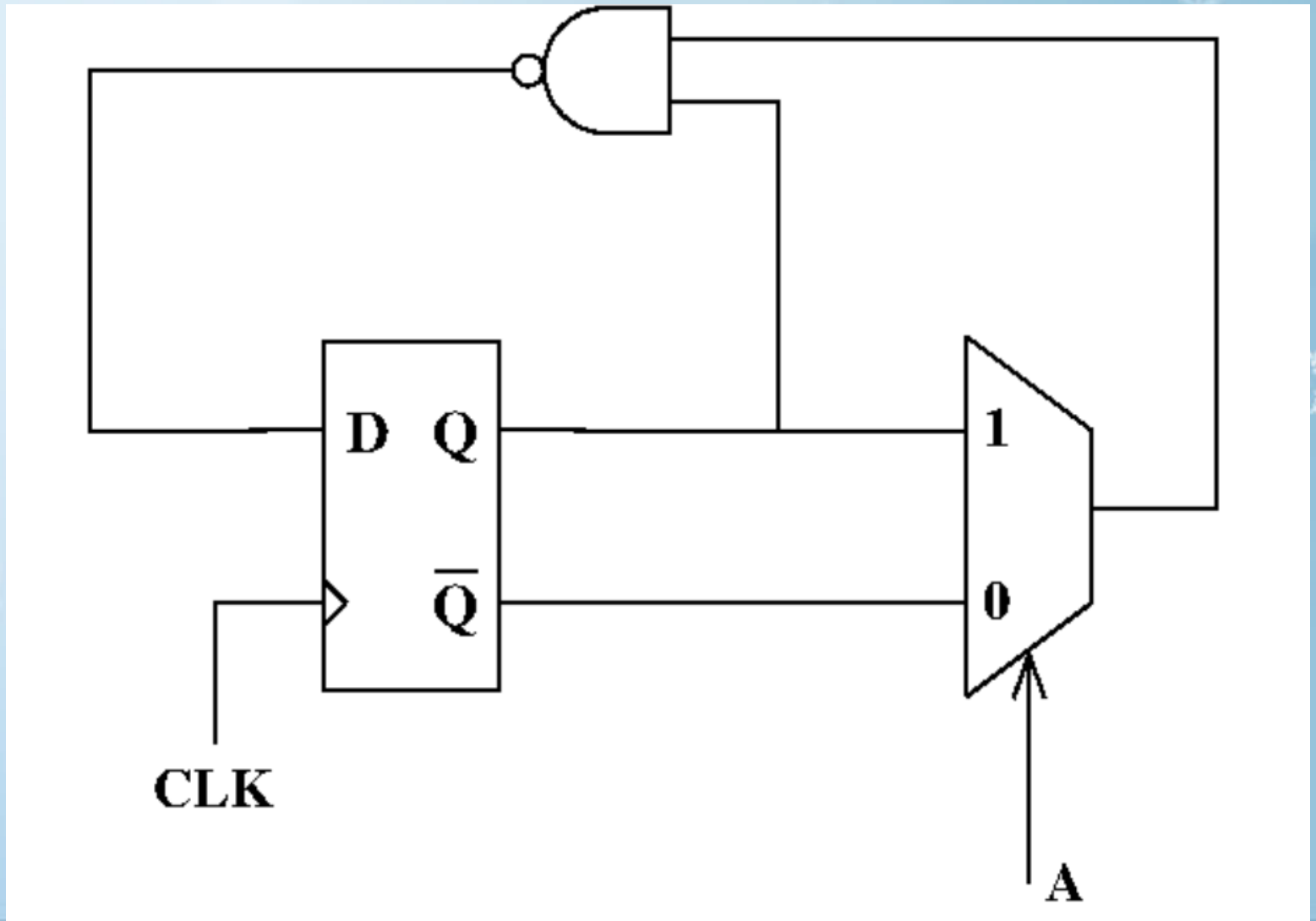
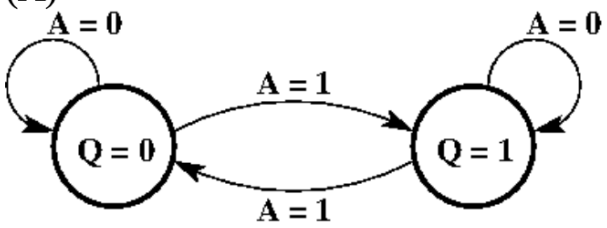
The state transition diagram for the follwoing circuit is:

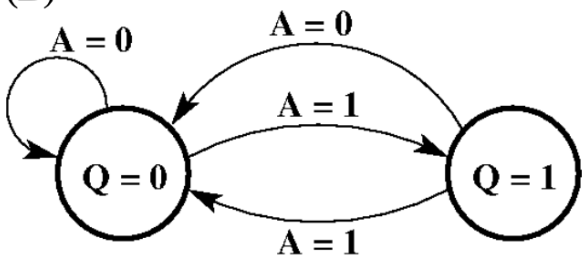


Options

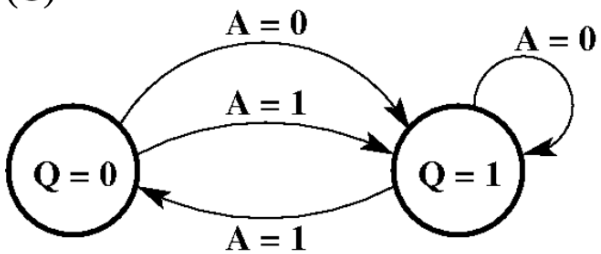
(A)



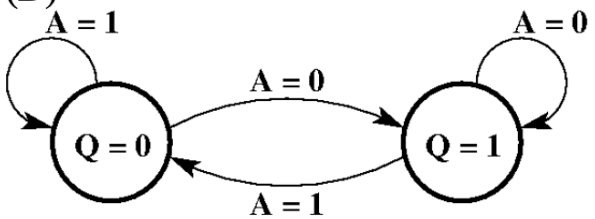
(B)



(C)



(D)



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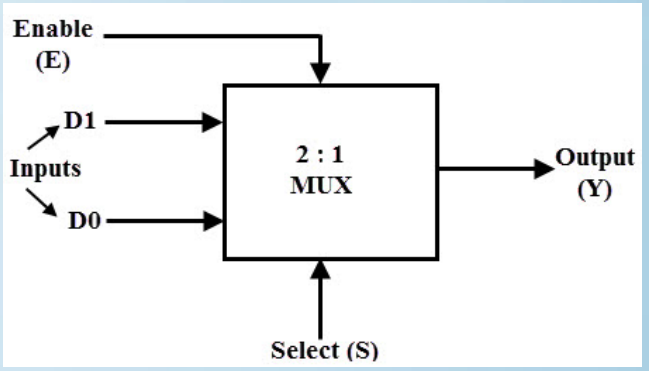
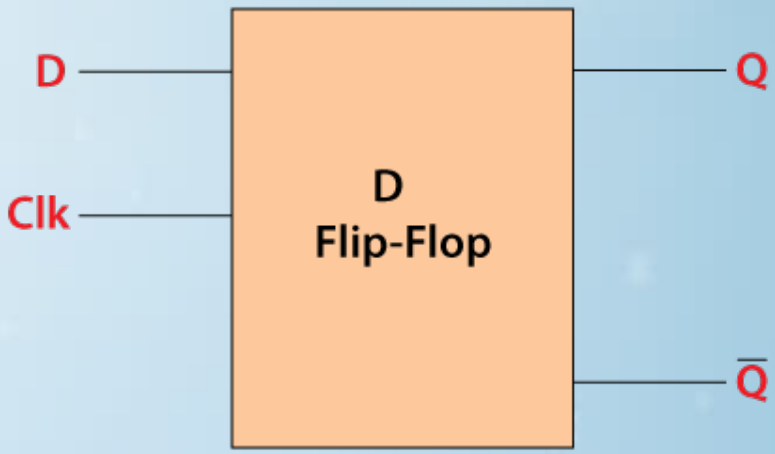
multiplexer



There are total 5 types of multiplexer it varies in no of inputs
It is also known as Data Selector
The relation between selctor and no of inputs is ($s = \log_2 n$)
if the selector(A) is 0 then the output will be 1 similarly the other
therefore, output y can be 1 or 0

D flip flop



The memory element in a sequential circuit is called as a flip flop from the question $D = \overline{Q.y}$

TABLE 1			
clk	D	Q	$\overline{Q}$
1	0	0	1
1	1	1	0

from the truth table the total possible outputs for Q = 0,1

1) so let us take Q = 0 when the selector A = 0, y = 1

$$D = \overline{Q} + \overline{y}$$

$$= 1 + 0 = 1$$

when the selctor(A) is 1 then y = 0

then D = 1 + 1 =1

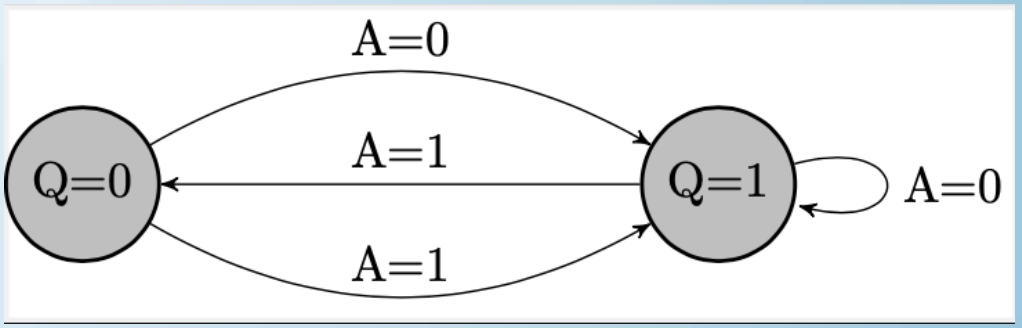
2) now take Q = 1 when selector A = 0, output y = 1

then D = 0 + 0 = 0

when selector A = 1, output y = 0

then D = 0 + 1 = 1

state transition diagram



the diagram itself explains, the Q = 0 state opens door and the transition goes to state Q = 1
similarly the transition goes from state Q = 1 to Q = 0 when the transition condition is A = 1.

state transition table

TABLE 2		
Present state	input	Next state
0	0	0
0	1	1
1	0	0
1	1	1

THE END

Thank you.