

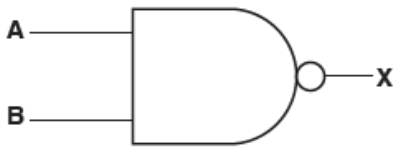


3.3.4 Flip Flops

Computer Science (9608)

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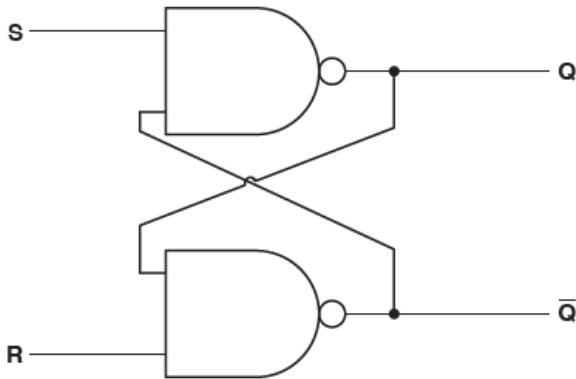
5 (a) Complete the truth table for this NAND gate:



A	B	X
0	0	
0	1	
1	0	
1	1	

[1]

A SR flip-flop is constructed using two NAND gates.



(b) (i) Complete the truth table for the SR flip-flop.

	S	R	Q	\bar{Q}
Initially	1	0	0	1
R changed to 1	1	1		
S changed to 0	0	1		
S changed to 1	1	1		
S and R changed to 0	0	0		

[4]

(ii) One of the combinations in the truth table should not be allowed to occur. State the values of S and R that should not be allowed. Justify your choice.

S = R =

[3]

Another type of flip-flop is the JK flip-flop.

(c) (i) Give one extra input present in the JK flip-flop.

[1]

(ii) Give **one** advantage of the JK flip-flop.

[1]

(d) Describe the role of flip-flops in a computer.

[2]

