Rajshahi University of Engineering and Technology
Course Title: Sessional Based on CSE 2203
Course Code: CSE 2204

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Date: 06.02.2021

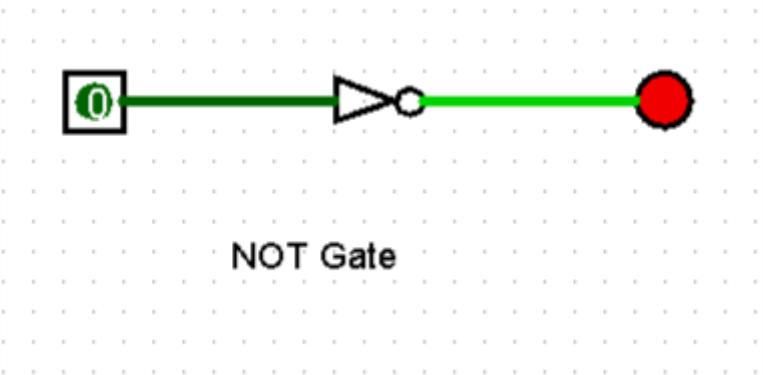
2.1

1. Name of the Experiment:
Verify the Basic NOT gate for all input combinations.

2. Objective:
- To know about the basic NOT gate

3. Theory:
The NOT gate is a single input single output gate. It is also known as inverter because it performs the inversion of applied binary signal. It changes 0 to 1 and 1 to 0. It has only one input and only one output. A NOT gate is represented as A = ~A.

4. Experimental Result analysis:
i. Circuit:



ii. Truth Table:

Input	Output
0	1
1	0

5. Conclusion:
From the experiment, we came to a conclusion that the basic NOT gate is an inverter. Because, when the input signal is low(or off), the output signal is high(or on) and vice versa.

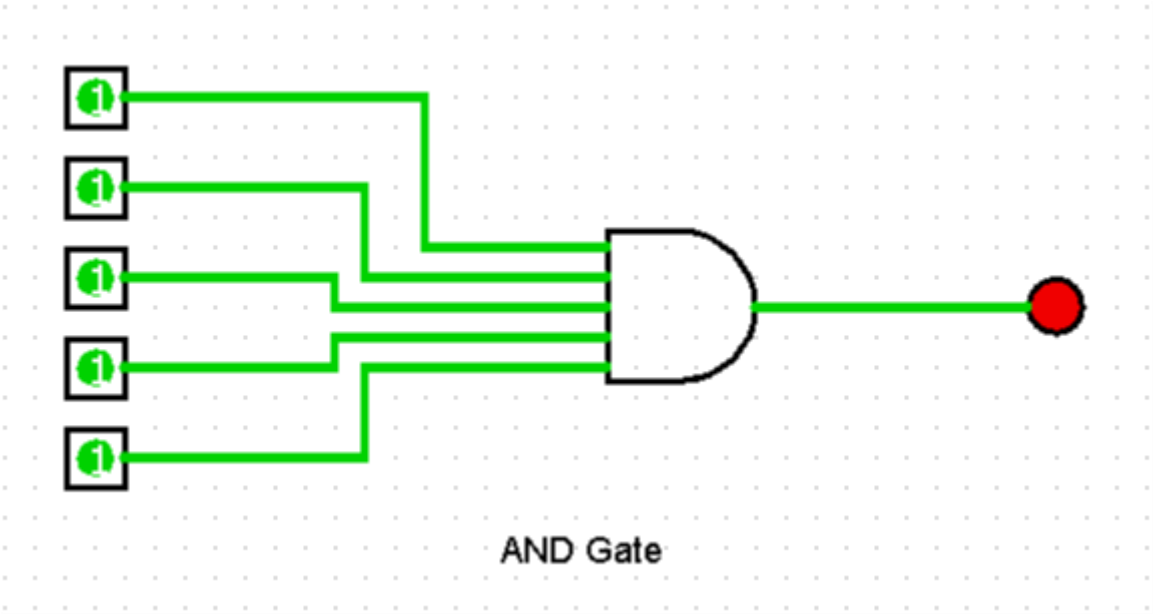
2.2

1. Name of the Experiment:
Verify the Basic AND gate (upto 5 inputs) for all input combinations.

2. Objective:
- To know about the basic AND gate

3. Theory:
AND gate is a two or more inputs and single output gate. It's output is high(or on) only when all inputs are high otherwise it's output is low(or off). An AND gate is represented as X = A.B .

4. Experimental Result Analysis:
i. Circuit:



ii. Truth Table:

Input					Output
A	B	C	D	E	X
0	0	0	0	0	0
1	0	0	0	0	0
0	1	0	0	0	0
1	1	0	0	0	0
0	0	1	0	0	0

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

5. Conclusion:

From the experiment, we came to a conclusion that the output of an AND gate is high(or on) when all inputs are high(or on). The output is low(or off) when at least one input is low(or off).

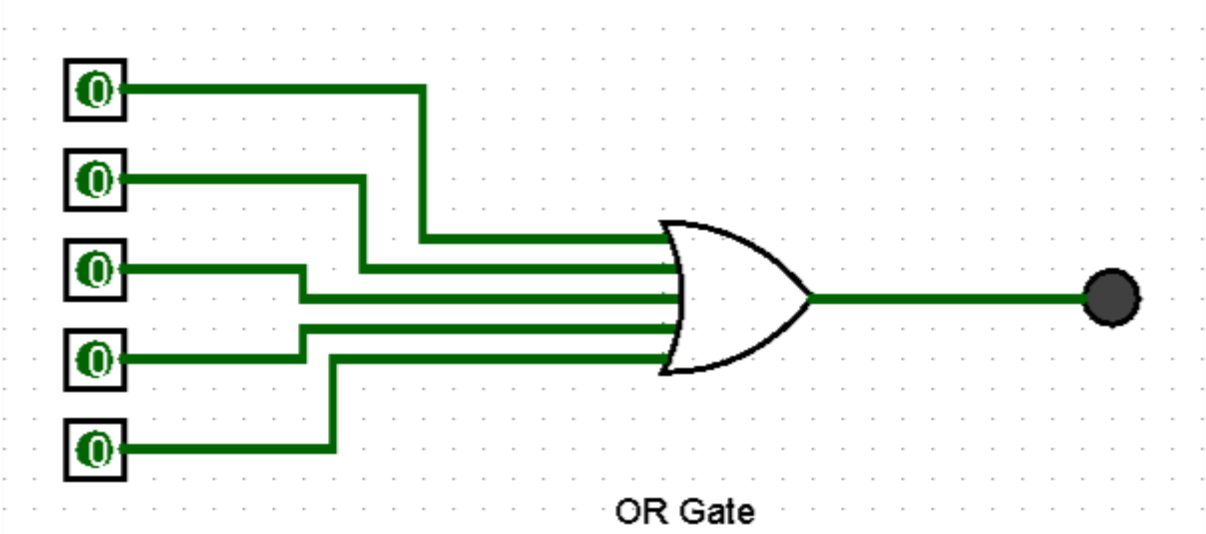
2.3

1. Name of the Experiment:
Verify the Basic OR gate (up to 5 Inputs) for all input combinations.

2. Objective:
- To know about the basic OR gate

3. Theory:
OR gate is also a two or more inputs and single output gate. It is called an OR gate because its output is high only if any or all of its inputs are high.

4. Experimental Result Analysis:
i. Circuit:



ii. Truth Table:

Input					Output
A	B	C	D	E	X
0	0	0	0	0	0
1	0	0	0	0	1
0	1	0	0	0	1
1	1	0	0	0	1
0	0	1	0	0	1
1	0	1	0	0	1
0	1	1	0	0	1
1	1	1	0	0	1

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

5. Conclusion:

From the experiment, we came to a conclusion that the output of an OR gate is high(or on) only if any or all inputs are high(or on). The output is low only if all input signals are low(or off).

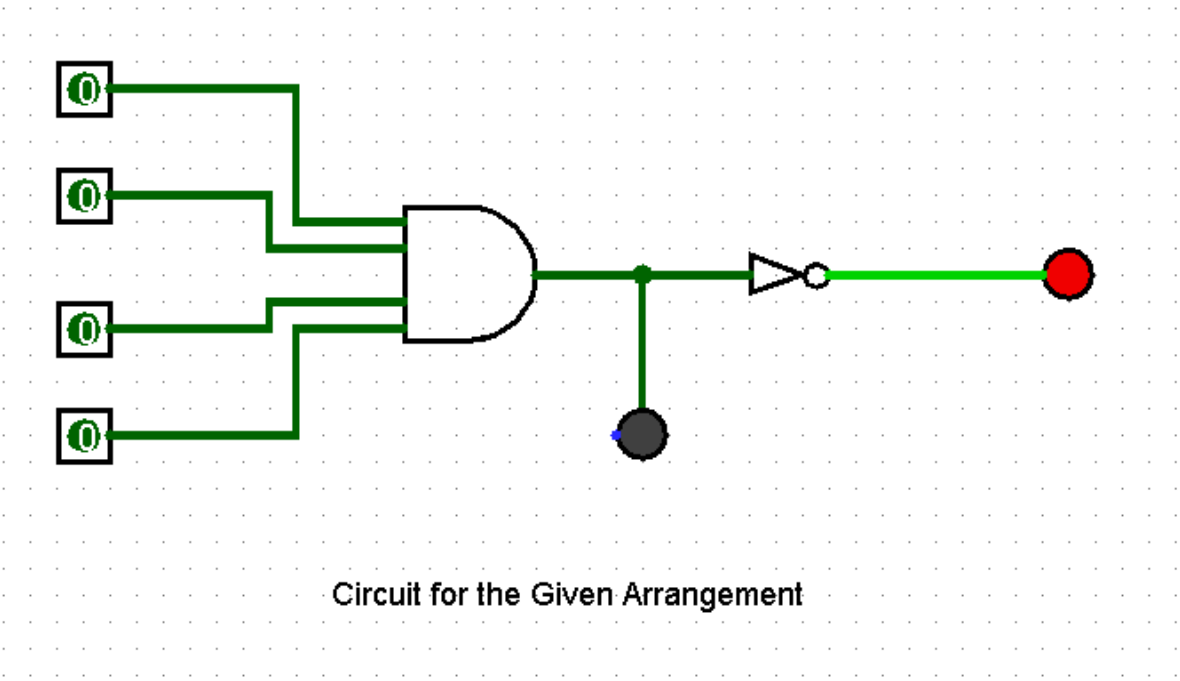
2.4

1. Name of the Experiment:
There are given four input signals. Display the output of a NOT gate connected at series with the output of AND gate.

2. Objective:
- To observe the output of the given circuit arrangement

3. Theory:
AND gate is a two or more inputs and single output gate. It's output is high(or on) only when all inputs are high otherwise it's output is low(or off). The NOT gate is a single input single output gate. It is also known as inverter because it performs the inversion of applied binary signal. It changes 0 to 1 and 1 to 0.

4. Experimental Result Analysis:
i. Circuit:



Circuit for the Given Arrangement

ii. Truth Table:

Input				Output	
A	B	C	D	X = ABCD	Y = ~X
0	0	0	0	0	1
1	0	0	0	0	1
0	1	0	0	0	1

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

5. Conclusion:

From the experiment, we came to a conclusion that the output of the AND gate of the given arrangement is like a typical four input AND gate. But the final output of the NOT gate is high(or on) when any or all input signals are low(or off). The output is low(or off) when all the input signals are high(or on).