University of Information Technology and Sciences (UITS)

Lab Report-2

IT-202 : Digital Logic Design Lab

AND Gate

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1   AND Gate

a Boolean operator which gives the value one if and only if all the operands are one, and otherwise has a value of zero.A circuit which produces an output signal only when signals are received simultaneously through all input connections.

2   Related Work

The AND gate is a basic digital logic gate that implements logical conjunction ($\wedge$) from mathematical logic – it behaves according to the truth table above.

2.1   Inserting Table Example

Input	Input	Output
0	0	0
0	1	0
1	0	0
1	1	1

Table 1: AND Gate

3   Methodology
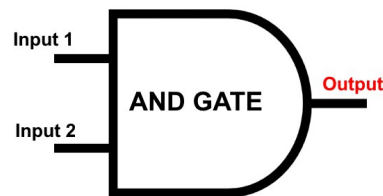
3.1   Insert Image

Figure 1: AND Gate

4   Results

The output state of a digital logic AND gate only returns "LOW" again when ANY of its inputs are at a logic level "0". In other words for a logic AND gate, any LOW input will give a LOW output.The logic or Boolean expression given for a digital logic AND gate is that for Logical Multiplication which is denoted by a single dot or full stop symbol, (.) giving us the Boolean expression of: A.B = Q.
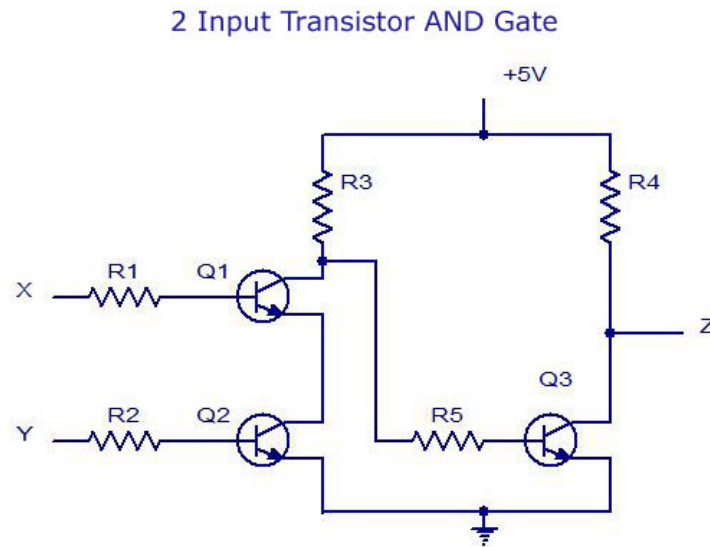
4.1   Output-1

Figure 2: Output-1

5   Conclusion

An AND gate has two input wires (A, B) and one output (C). Electricity will flow at C if and only if both A and B have current. Traditionally, the AND operation is written like multiplication; that is, A AND B = AB. ... Finally, there is a gate whose output is the opposite state as its input also known it's working method and how does it works and where it is use and related work and also know the truth table formula and input/output .

References

https://www.electronics-tutorials.ws/logic/logic$_4$.html
$https://www.allaboutcircuits.com/textbook/digital/chpt-3/not-gate/$