GCST

2.4 BOOLEAN LOGIC

CONCISE NOTES

GCSE OCR

Truth tables show all possible input permutations and the corresponding outputs for a logic system. If a logic system has n inputs, it will have 2^n possible input permutations. This equals the number of rows in the truth table, for example with three inputs it will have 2^3 = 2 × 2 × 2 = 8 rows

NOT GATE

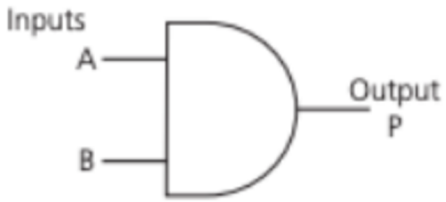
A NOT gate reverses the input given to it. If a 0 is input, a 1 will be output and vice versa

A	P
0	1
1	0

AND GATE

An AND gate gives a 1 output only if both inputs are 1s. Any other inputs (0,0 / 0,1 / 1,0) give a 0 output.

A	B	P
0	0	0
0	1	0
1	0	0
1	1	1

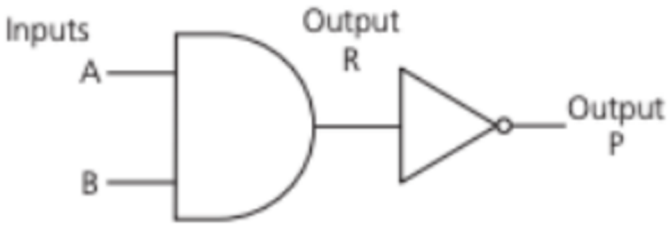


OR GATE

An OR gate gives a 1 output if either (or both) inputs are 1s. If both inputs are 0s, the output will be 0

A	B	P
0	0	0
0	1	1
1	0	1
1	1	1

COMBINING GATES



A	B	R = (A AND B)	P = (NOT R)
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

If you found this useful, drop a follow to help me out!

THANK YOU!

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