Name :- Ayush Godiyal, Course :- MCA, Student ID :- 21711017
Subject :- Computer Organization, Roll No :- 2101046

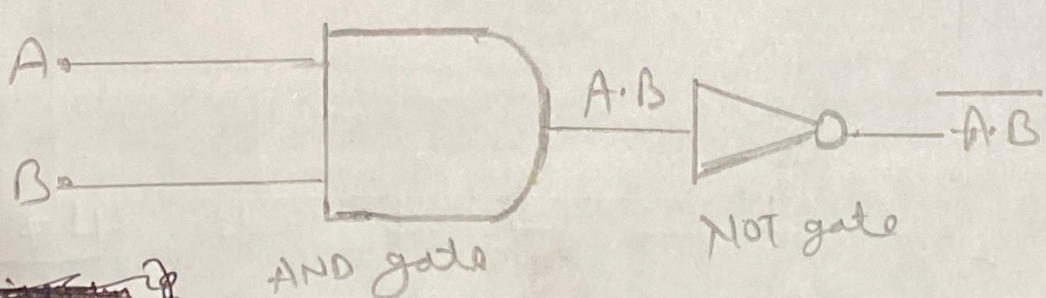
ans 1:- NAND Gate

A NAND gate ("not + AND gate") is a logic that produces a low ~~out~~ output (0) only if all its inputs are true, and high output (1) otherwise. Hence the NAND gate is the inverse of an AND gate, and its circuit is produced by connecting an AND gate to a NOT gate. Just like an AND gate, a NAND gate may have any number of input probes but only one output probe.

Working

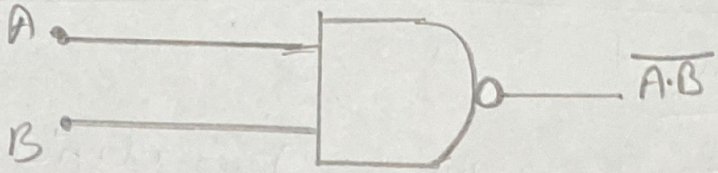
The NAND gate performs the logical NAND operation. NAND gates are known as universal gates (along with NOR gates), which means they are a type of logic gate which can implement by Boolean function without the need to use any other gate.

The basic logical construction of the NAND gate is AND gate followed by NOT gate



~~Circuit diagram~~

Symbol



NAND gate

truth table

Inputs		Outputs	
A	B	A·B	$\overline{AB}$
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

when both inputs are high it produces output ~~high~~ low otherwise high.

circuit diagram