Name → Manish Singh
University Roll No → 2101106
Course → mcA I B
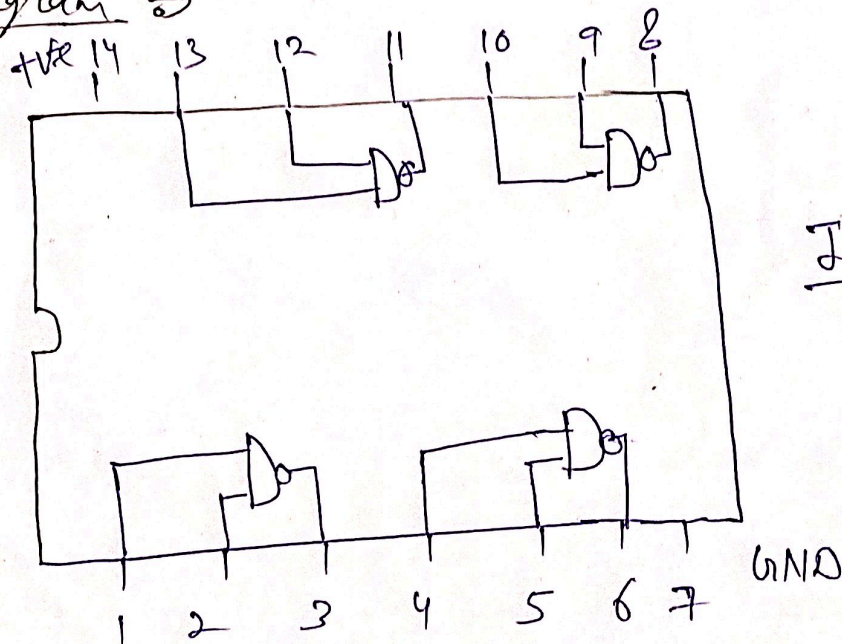Practical Name → Computer Organization mid-term.
Practical Code → PMC 102
Date → 22/03/2022

Q1 ⇒ Discuss the working of NAND gate with the help of circuit diagram and truth table.

Theory ⇒ The NAND gate is a combination of ana AND Gate and NOT Gate. They are connected in cascade form. It is also called Negated AND Gate. The NAND GATE provides the false or low output only when their outputs is high or true.
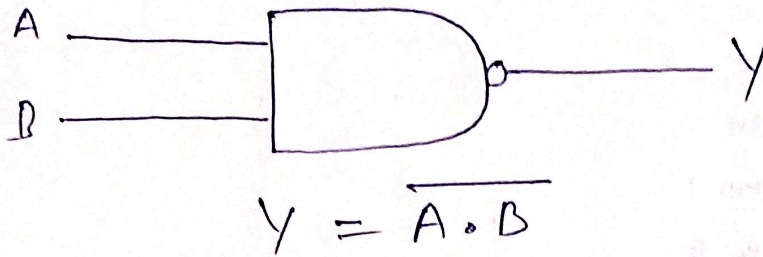
IC-Diagram ⇒

IC No. ⇒ 7400

Circuit Diagram $\Rightarrow$

A ——————⌐

B ——————

Y

$$Y = \overline{A \cdot B}$$

Truth Table $\Rightarrow$

A	B	$Y = \overline{A \cdot B}$
0	0	1
0	1	1
1	0	1
1	1	0

NAND gate is a NOT gate followed by AN AND gate, so if we can cancel the effect of NOT gate in a NAND gate, it will become an AND gate. Hence, a NOT gate followed by a NAND gate realize an AND Gate.

=) From the truth table of the Gate, it is clear that all the inputs must be high to get a low input and if any of the input low, the output obtained will be high. If any one of the input is also high the output will be high that is 1.