5 Lecture - CS302

Important Subjective

1. **What is the basic function of a NOT gate?**
   Answer: The basic function of a NOT gate is to invert the input signal. It has only one input and one output.

2. **What is the basic function of an AND gate?**
   Answer: The basic function of an AND gate is to produce a high output signal only if all its input signals are high. It has two or more inputs and one output.

3. **What is the basic function of an OR gate?**
   Answer: The basic function of an OR gate is to produce a high output signal if any of its input signals are high. It has two or more inputs and one output.

4. **What is the basic function of a NAND gate?**
   Answer: The basic function of a NAND gate is to produce a low output signal if all its input signals are high. It is the combination of an AND gate followed by a NOT gate.

5. **What is the basic function of a NOR gate?**
   Answer: The basic function of a NOR gate is to produce a high output signal if all its input signals are low. It is the combination of an OR gate followed by a NOT gate.

6. **What is the basic function of an XOR gate?**
   Answer: The basic function of an XOR gate is to produce a high output signal if the number of high input signals is odd. It has two inputs and one output.

7. **What is a truth table?**
   Answer: A truth table is a table that shows the output of a logic gate or circuit for all possible input combinations.

8. **What is a logic gate circuit?**
   Answer: A logic gate circuit is a combination of logic gates that perform a specific logical operation. These circuits are used to implement complex digital systems.

9. **What is the difference between a combinational logic circuit and a sequential logic circuit ?**
   Answer: A combinational logic circuit's output is determined solely by the input signals, while a sequential logic circuit's output is determined by both the input signals and the current state of the circuit.

10. **What is a half adder?**
    Answer: A half adder is a combinational logic circuit that adds two binary digits and produces a sum and a carry output.