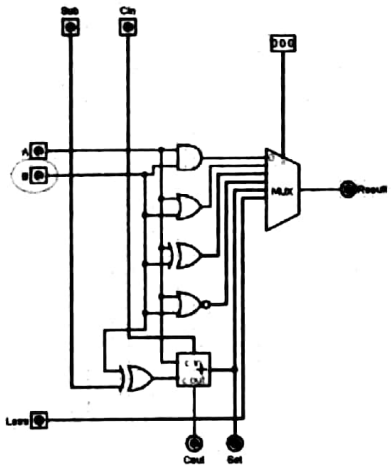
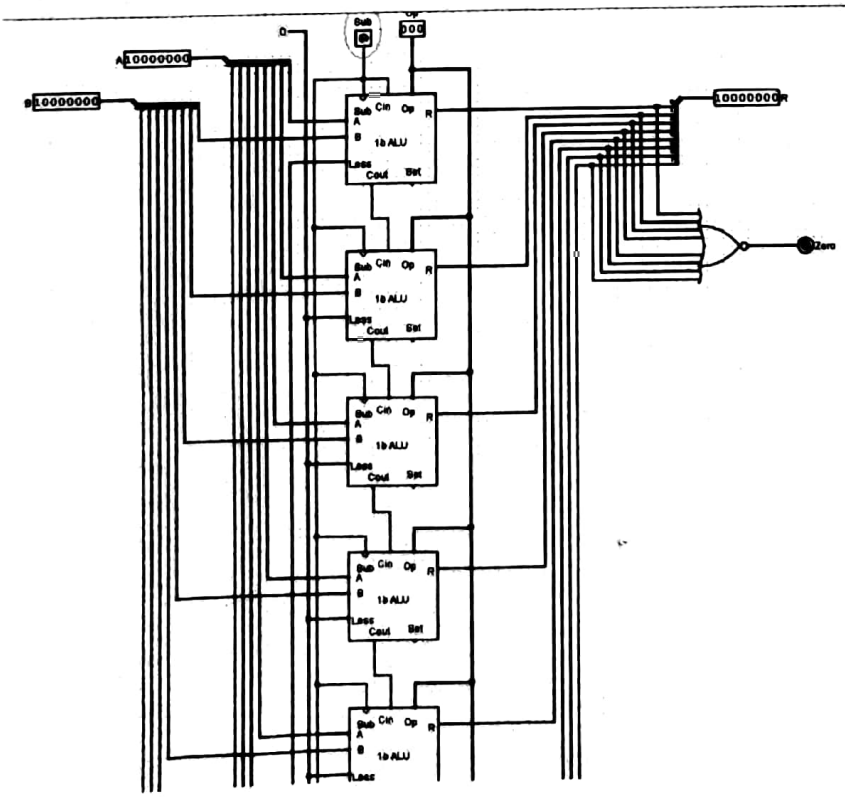
Snapshots :

1-bit Arithmetic Logic Unit (ALU)



8-bit Arithmetic Logic Unit (ALU).



RAMAIAH Institute of Technology

Lab-5

Data Sheet

MARKS :

Name :	MANAS P S	Branch:	CSE
USN/Roll No. :	1MS18CS065	Sem/Sec:	IV 'B'
Subject :	Computer Organization and Architecture	Subject Code:	CS45

Activity V : Designing an ALU to perform arithmetic and logical functions using logisim simulator

Objective : To simulate working of ALU using simulator.

Activity to be performed by students :

List out the steps in designing ALU :

1. Add the two i/p pins. Name them A and B.
2. Add OR, AND, XOR, NOR gates and a 1-bit adder.
3. Connect the A's and B's of all the gates to their respective pins.
4. Add an output pin and name it Result.
5. Add a 1-bit multiplexer with 3 select bits.
6. Connect outputs of all gates to the MUX.
7. Connect 3-bit i/p pin to MUX.
8. Add i/p pin to C_{in} and o/p pin to C_{out}.
9. Add an XOR gate, connect its o/p to C_{out}. The first i/p must be connected to B and second to another i/p pin sub.

P.T.O.

10. Add another i/p and name it less. Connect it to the MUX.

11. Add an output pin and name it Set, connect it to the o/p of adder unit.

Snapshots:

Attached

Lab-5

Ramaiah Institute of Technology
(Autonomous Institute, Affiliated to VTU)

Department of CSE

Programme: B.E
Course: Computer Organization

Term: Jan to May 2019
Course Code: CS45

Activity V: Designing an ALU to perform arithmetic and logical functions using Logisim simulator.

Name: MANAS. P.S	**Marks:** /10	**Date:**
USN: 1MS18CS065	**Signature of the Faculty:**	

Objective: To simulate the working of Arithmetic and Logical Unit using simulator.

Simulator Description: Logisim is an educational tool for designing and simulating digital logic circuits. With its simple toolbar interface and simulation of circuits as you build them, it is simple enough to facilitate learning the most basic concepts related to logic circuits. With the capacity to build larger circuits from smaller sub circuits, and to draw bundles of wires with a single mouse drag, Logisim can be used (and is used) to design and simulate entire CPUs for educational purposes.

Activity to be performed by students:

List out the steps in designing ALU

Attached in Datasheet