

Expt. No. 4

Date 25/10/21

Page No. 15

EXPERIMENT NO. → 4

Aim: Implementation of 4-bit parallel adder using 7483 IC and verify the output of given inputs.

i) A = 1011

B = 1001

ii) A = 0011

B = 0010

Apparatus Required: i) Bread board → 1
ii) 7483 IC → 1
iii) Connecting wires → As required.

Theory:

Parallel adder:- A n -bit parallel adder can be constructed using a number of full adder circuit connected in parallel. The carry O/P of each is connected to the carry I/P of the next higher order adder. Since all the bits of the augend and addend are fed into adder circuits simultaneously, so, the addition in each position or bit is known as parallel adder.

A ₃	A ₂	A ₁	A ₀	→ Augend bits
B ₃	B ₂	B ₁	B ₀	→ Addend bits
Carry ₃	S ₃	S ₂	S ₁	S ₀ → Sum bits

Teacher's Signature : _____

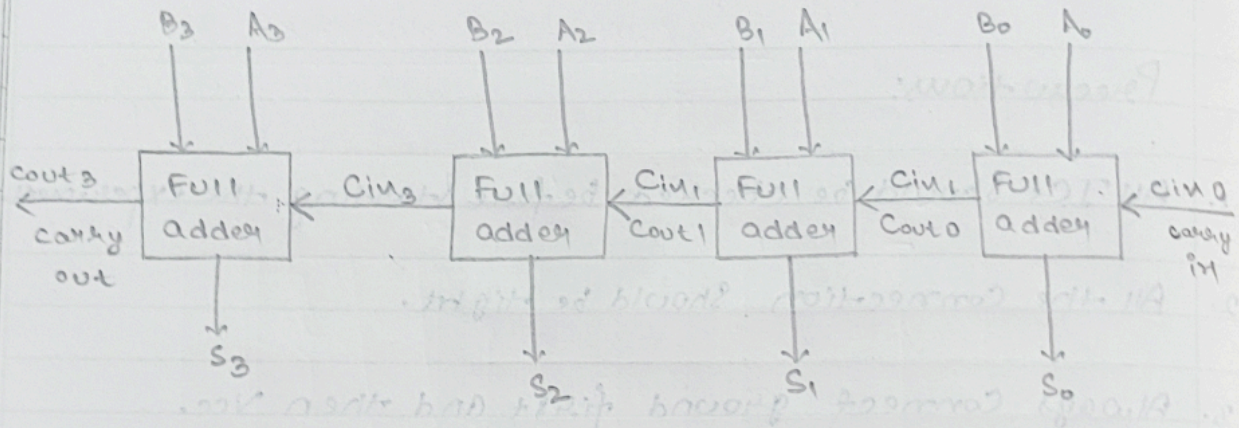
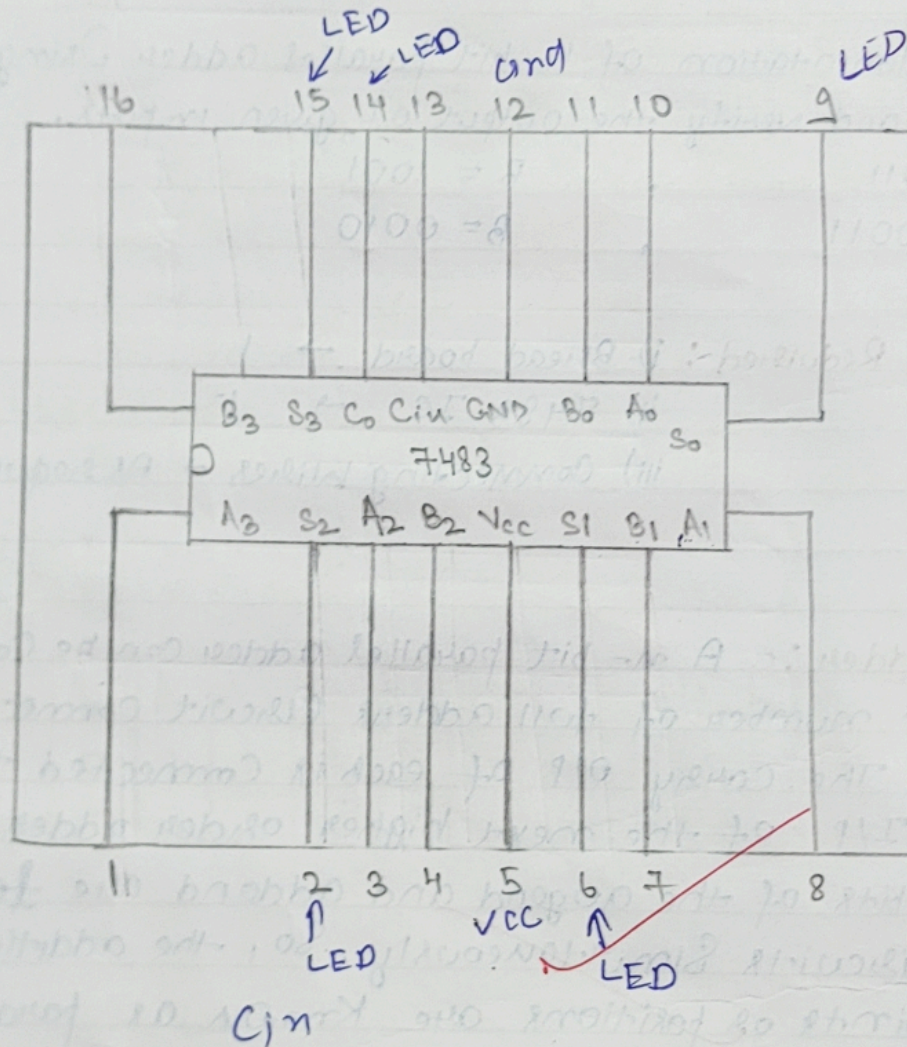


Fig: Logic Diagram of BCD Adder.

Truth Table

A ₃	A ₂	A ₁	A ₀	B ₃	B ₂	B ₁	B ₀	Cin	S ₃	S ₂	S ₁	S ₀	Cout
1	0	1	1	1	0	0	1	0	0	1	0	0	1
0	0	1	1	0	0	1	0	0	0	1	0	1	0

PIN DIAGRAM OF 7483 IC

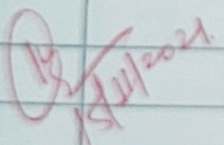


where A_0, A_1, A_2, A_3 and B_0, B_1, B_2, B_3 are BCD input and S_0, S_1, S_2, S_3 are sum outputs.

Result: For various combinations of selected input lines, observed the LED output and verified the truth table.

Precautions:-

- i) All IC's should be checked before starting the experiment.
- ii) All the connection should be right.
- iii) Always connect ground first and then Vcc.
- iv) Suitable type table should be used for different types of circuit.
- v) After completion of experiment switch off the supply of the apparatus.

 15/11/2021