Analog and Digital Electronics Lab (EC13203)
IT-B1
Lab-4
(Design of Half Subtractor and Full Subtractor by using Basic Gates/Universal Gate)

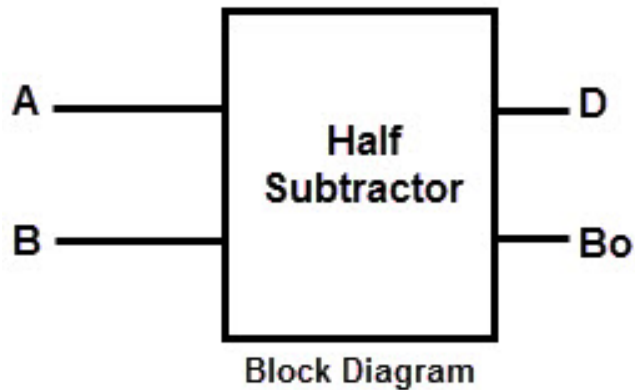Dr. Anand Sharma

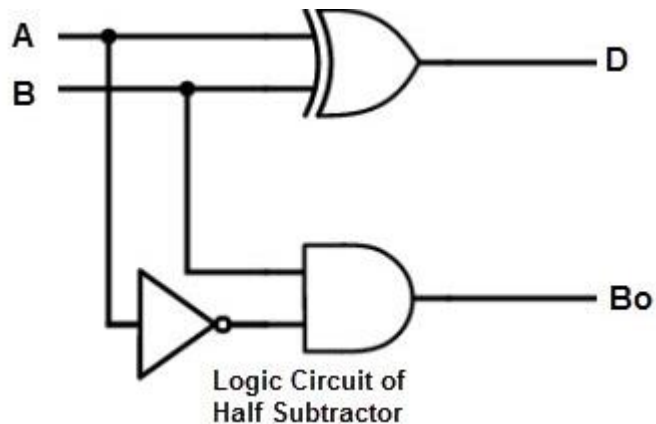Assistant Professor

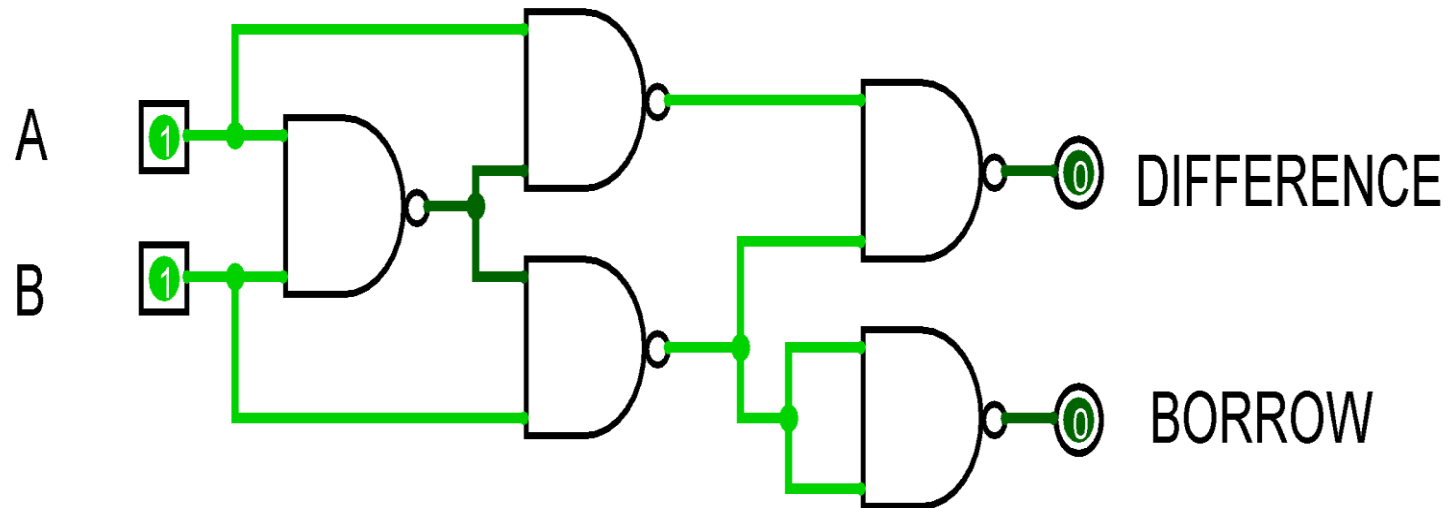ECED, MNNIT Allahabad

Half Subtractor

Block Diagram

Block Diagram

Truth Table

A	B	D	B_o
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

Implementation with basic logic gates

Logic Circuit of
Half Subtractor

Cont.…

Implementation with Universal logic gates

Full Subtractor

Block Diagram
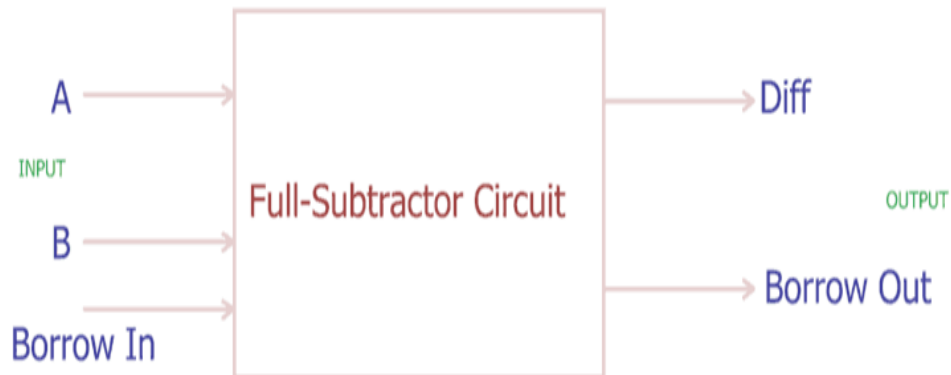
Truth Table

A	B	C	D	BO
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

Implementation with basic logic gates

Cont....

Implementation with Universal logic gates

BORROW

DIFFERENCE
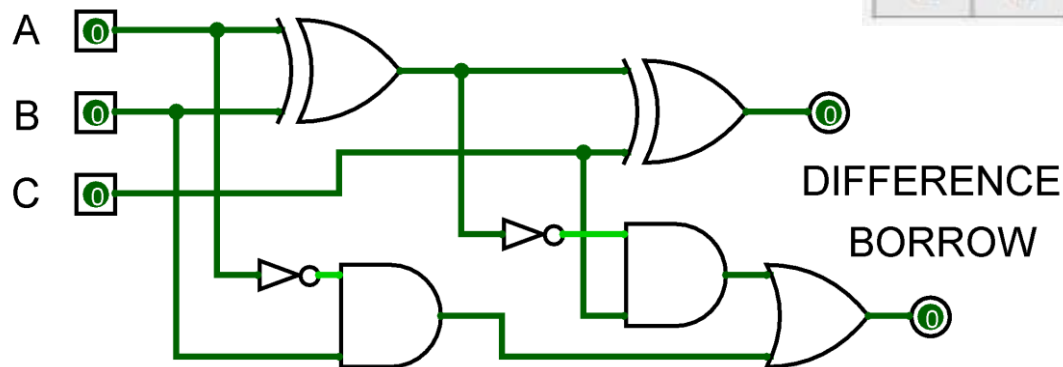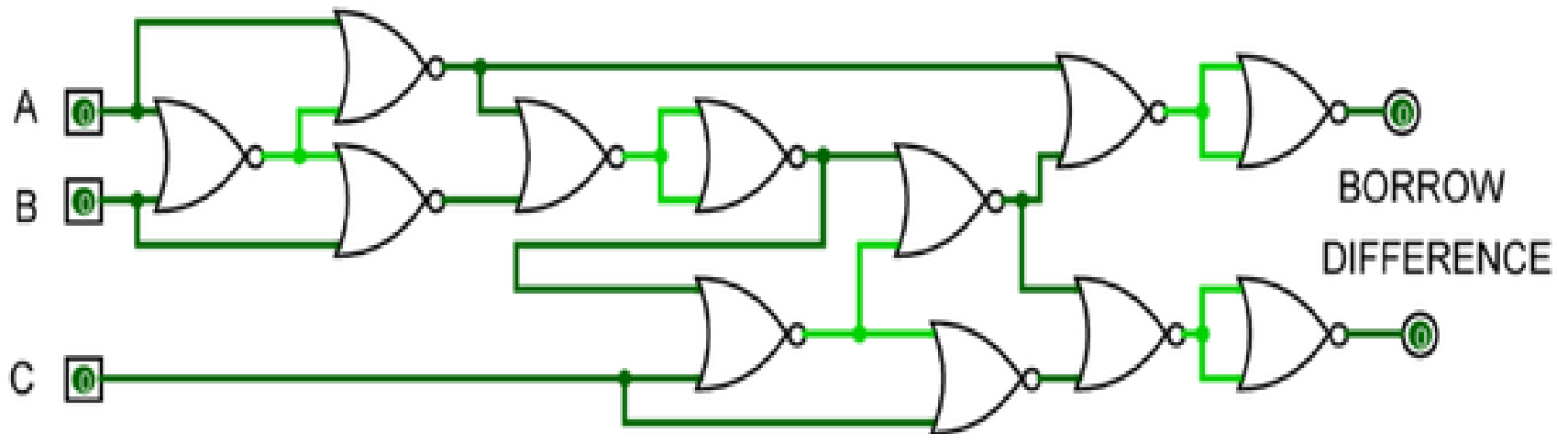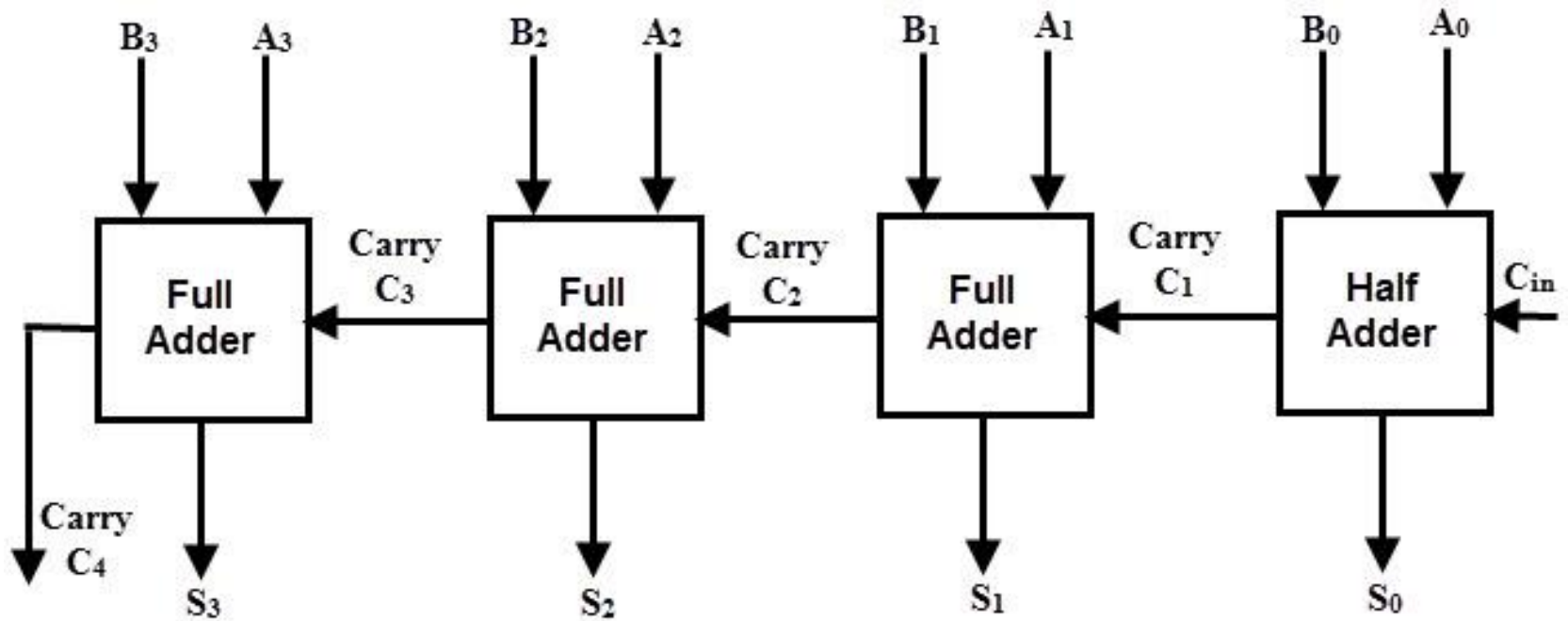
4-bit Adder

Gate Level Diagram of 4-bit Adder