

## COMPUTER ARCHITECTURE EXPERIMENT – 1

### Implementation of Multiplexers

**Aim:** In this experiment, students will be introduced to the operation of multiplexers and implement the full-adder circuit using multiplexers.

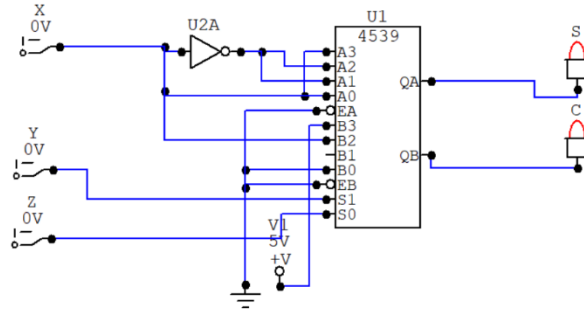
#### Experimental Work:

*Consider the Full-Adder circuit:*

$$S(x, y, z) = x \oplus y \oplus z$$

$$C(x, y, z) = x \cdot y + (x \oplus y) \cdot z$$

Implement the Full-Adder circuit by using the multiplexer 4539. Confirm that your multiplexer implementation is satisfying the truth table of Full-Adder.



Multiplexer

X	Y	Z	C	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	0	0
1	1	0	1	0
1	1	1	1	1