

EXPERIMENT NO. - 10

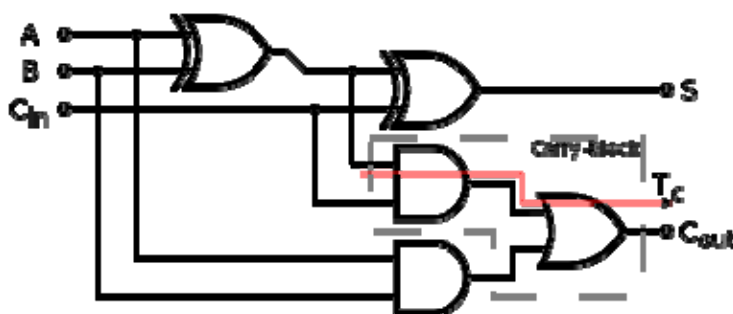
Aim of the Experiment:

Design, assemble and testing of Full adder

Theory:

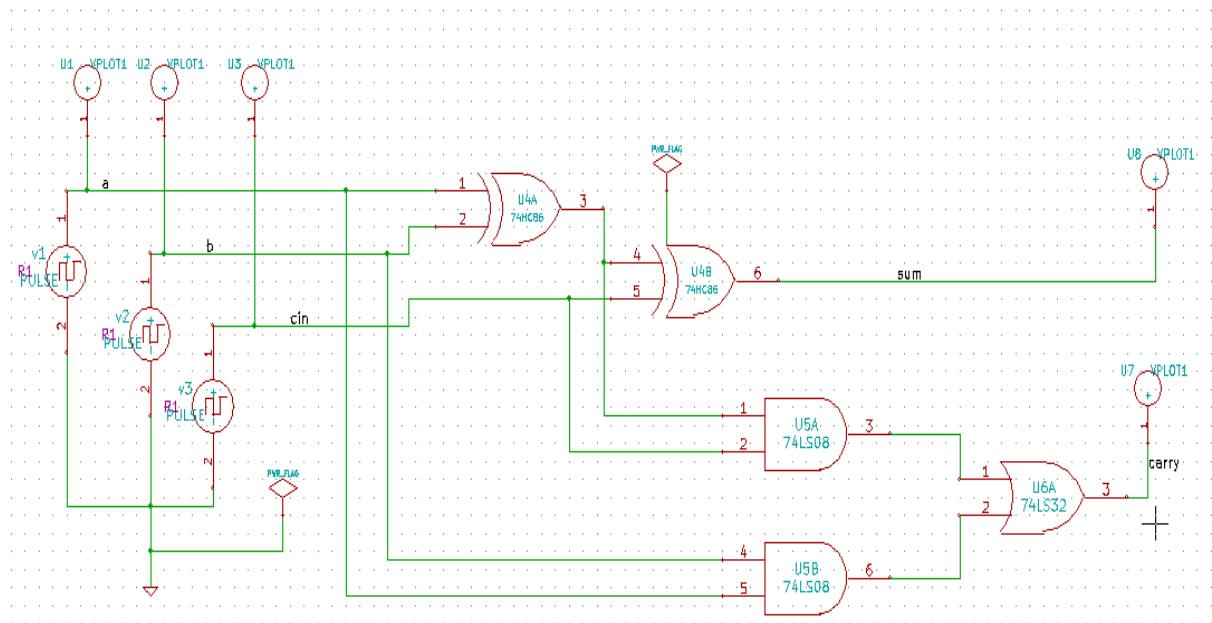
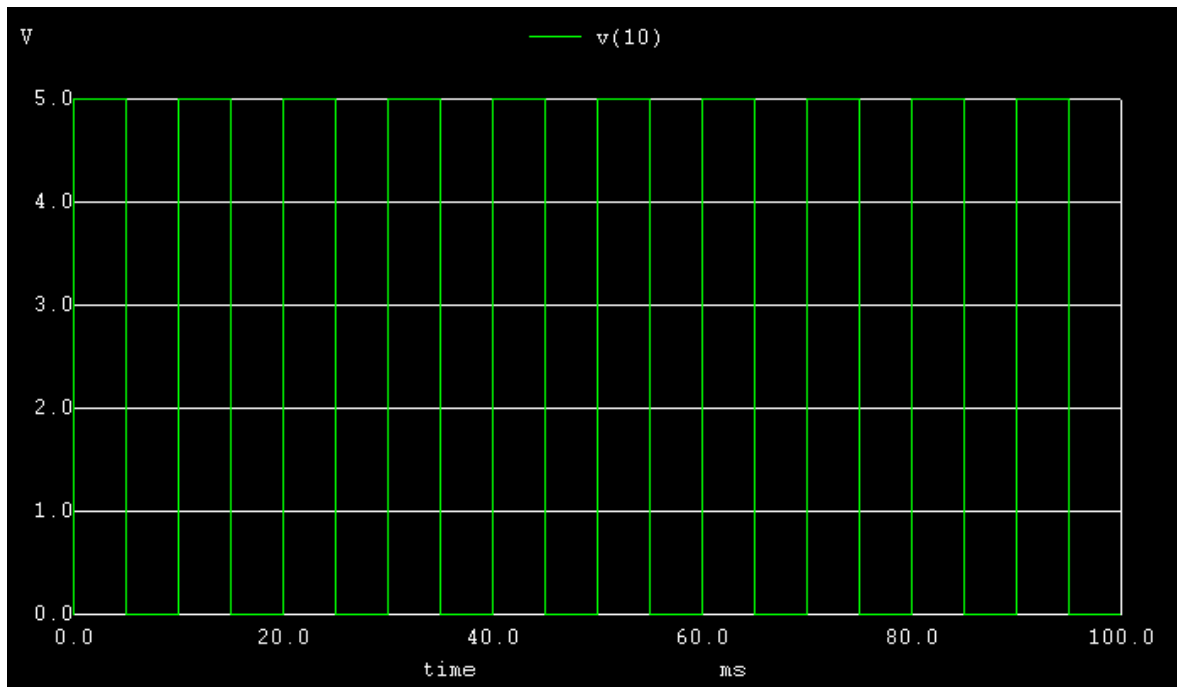
A full adder adds binary numbers and accounts for values carried in as well as out. A one-bit full adder adds three one-bit numbers, often written as A, B, and C_{in} ; A and B are the operands, and C_{in} is a bit carried in from the previous less significant stage. The full adder is usually a component in a cascade of adders, which add 8, 16, 32, etc. bit binary numbers. The circuit produces a two-bit output, output carry and sum typically represented by the signals C_{out} and S, where, the one-bit full adder's truth table is:

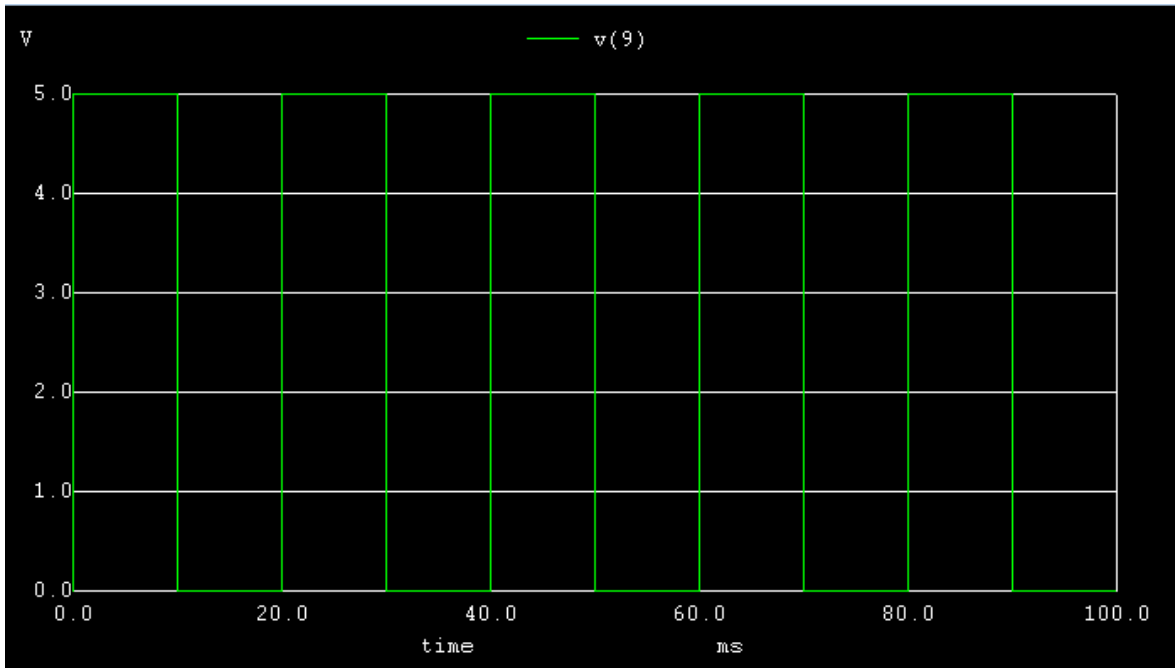
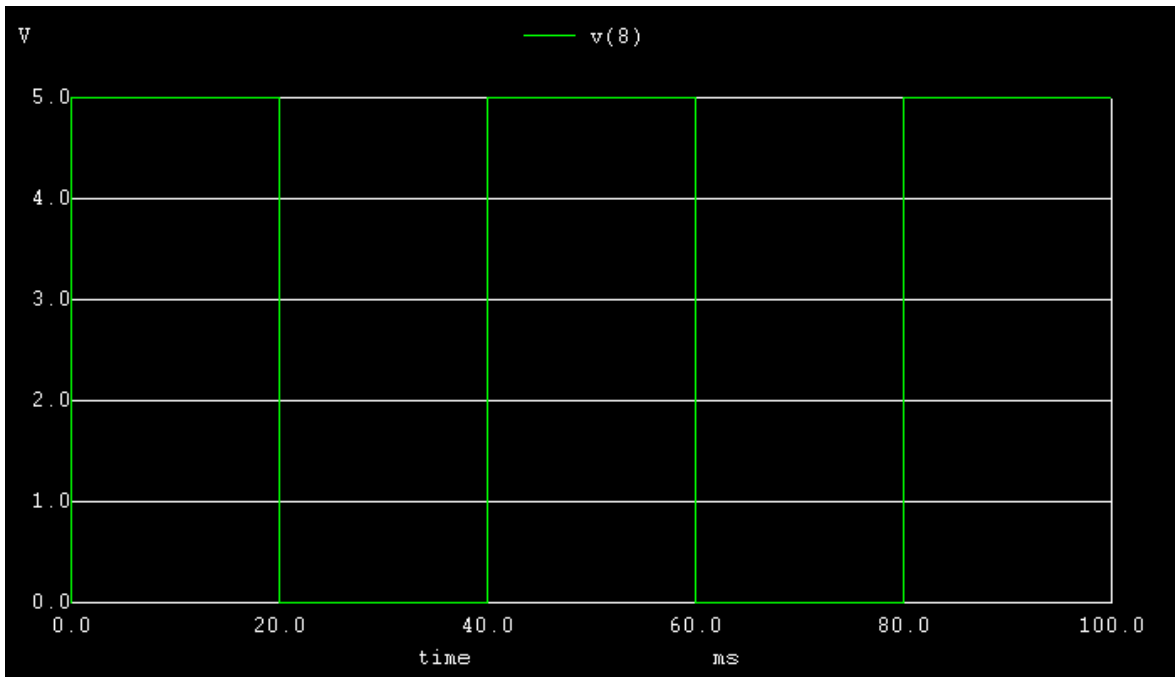
Inputs			Outputs	
A	B	C_{in}	C_{out}	S
0	0	0	0	0
1	0	0	0	1
0	1	0	0	1
1	1	0	1	0
0	0	1	0	1
1	0	1	1	0
0	1	1	1	0
1	1	1	1	1

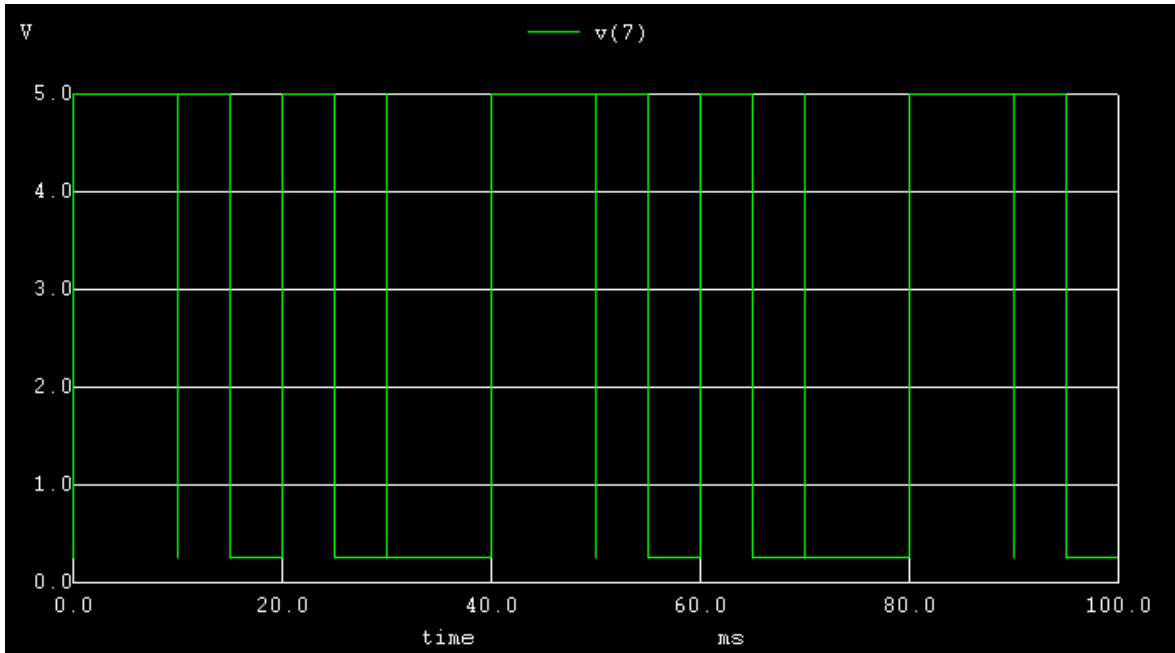
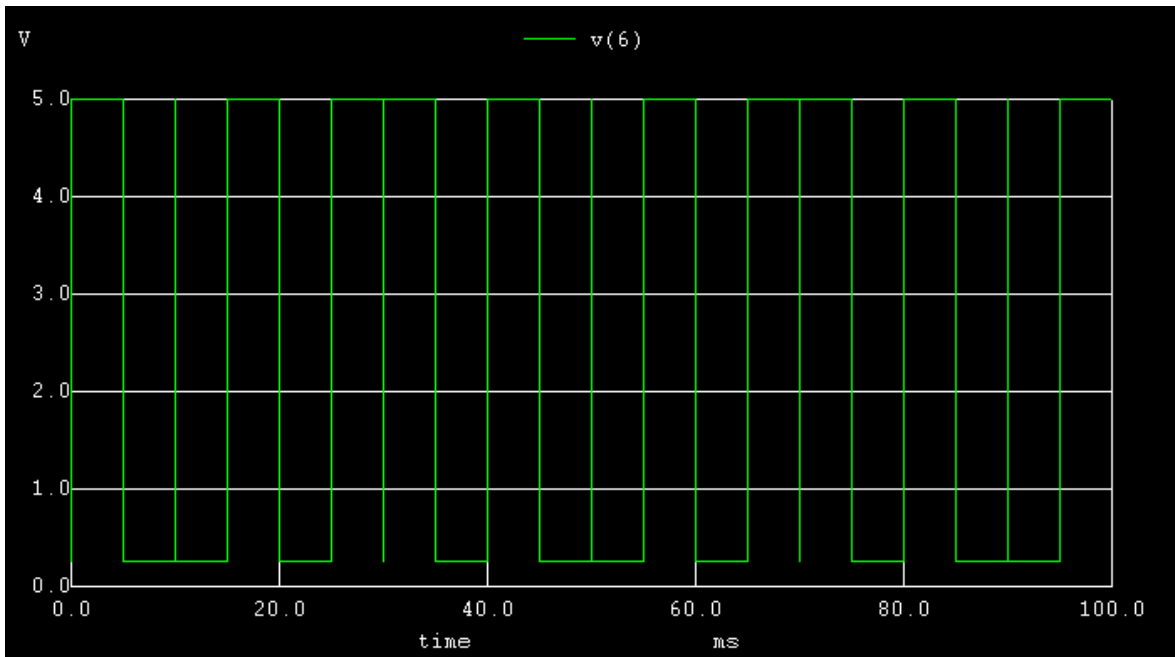


$$S = A \oplus B \oplus C_{in}$$

$$C_{out} = (A \cdot B) + (C_{in} \cdot (A \oplus B))$$

Schematic Circuit:**Input Waveform:****A:**

B:**Cin:**

Output Waveform:**Sum(S):****Cout:**

Conclusion:

Date:

Signature of the Student

NAME:

ROLL NO.:

GROUP ID:

SUB GROUP NO.:

Experiment Mark: / 20

Instructor's Signature