

Name → Nilesh Kumar
Univ. Roll No → 2101134
Enrollment No → PV-2101034

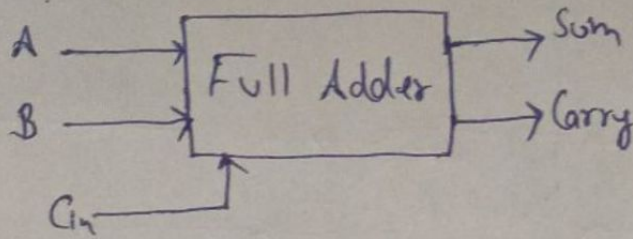
Student ID → 21711127
Semester → Ist, MCA-A
Paper Code → PMC-102

(Pg-1)

Ans 1

a) Full Adder → "The half adder is used to add only two no. To overcome this problem, the full adder was developed. The full adder is used to add three 1-bit binary numbers A, B and Carry C. The full adder has three input states and two output states i.e. sum and Carry.

Block Diagram



Truth Table

Inputs			Output	
A	B	Cin	Sum	Carry
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

the SOP form can be obtained with the help of k-map is :-

Nilesh

Name → Nilesh Kumar

Student ID → 21711127

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Ans Q4 (A)

(A) Truth Table

		Y			
X	Z	00	01	11	10
			1		1
0					
1		1		1	

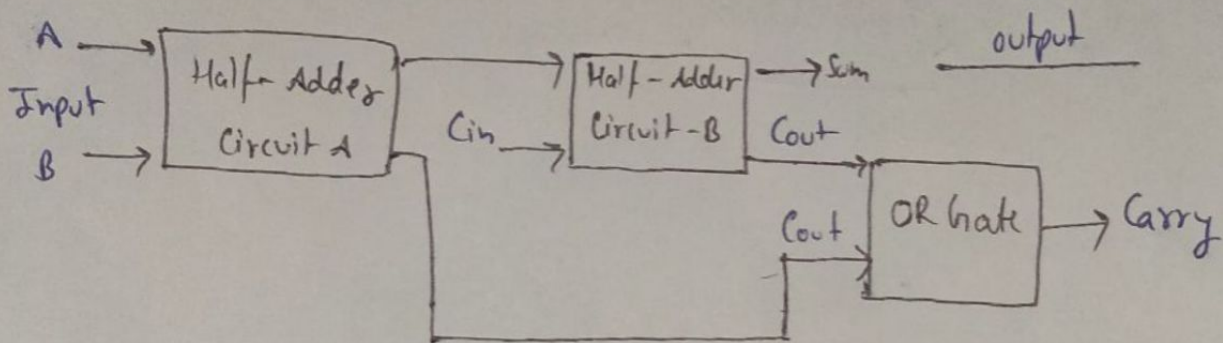
$$S = x'y'z + x'y'z' + xy'z' + xyz$$

$$\text{Sum} = x'y'z + x'y'z' + xy'z' + xyz$$

$$\text{Carry} = xy + xz + yz$$

		Y			
X	Z	00	01	11	10
			1	1	
0					
1		1	1	1	

$$C = xy + xz + yz$$



The above block diagram describes the construction of the full adder circuit. In the above circuit, there are two half adder circuits that are combined using an OR gate. The first half adder has two single-bit binary inputs A or B. As we know that, the half-adder produces two outputs (Sum & Carry). The 'Sum' output of the first adder will be the first input of the second half adder. The second half adder will again provide 'Sum' and 'Carry'. The final outcome of the full adder circuit is the 'Sum' bit. In order to find the final output of the 'Carry', we provide the 'Carry' output of the first and the second adder into the OR gate. The outcome of the OR gate will be the final Carry.

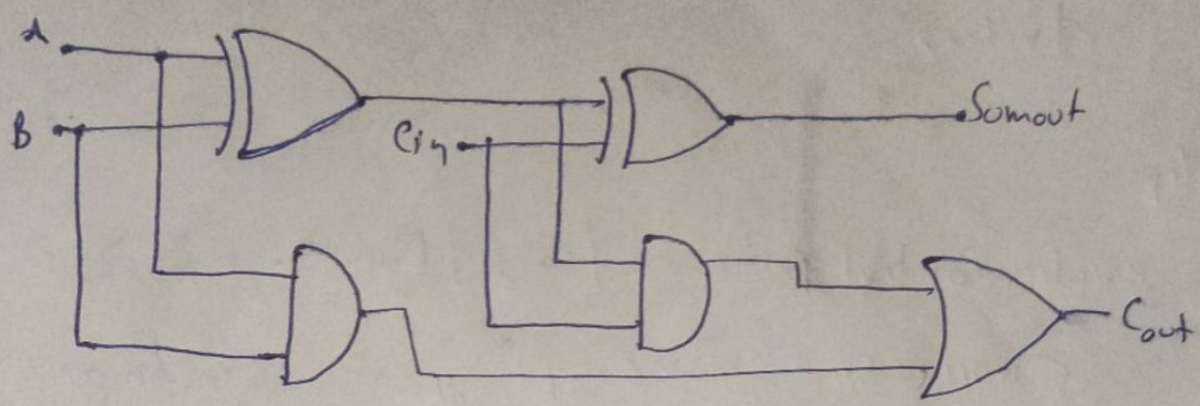
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of the full adder circuit.

The MSB is represented by the final 'Carry' bit.

The full adder logic circuit can be constructed using the 'AND' and the 'XOR' gate with an OR gate.



Full Adder Circuit.

~~Sumout~~ Diagram

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Name → Nilesk Kumar
Student Id → 21711127

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Ans 1

Operating System

1) Cat > demo1

~~This is the~~

THIS IS THE FIRST LINE IN UPPER CASE

this is the second line in this file and the first line with all its characters in lower case

This line has all its first character in upper case

This is the last line

2) ~ /dir 2 \$ grep "last" demo1

This is the last ~~line~~ line

3) ~ /dir 2 \$ ~~grep~~ cp demo1 demo2

~ /dir 2 \$ ls

4) ~ /dir 2 \$ grep "line" demo1 demo2

demo1: this is the second line in this file and ~~second~~ first line with all its characters in lower case.

demo1: this is the last line

demo2: this is the second line in this file and first line with all its characters in lowercase

demo2: this is the last line.

Nilesk

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Q. 2

5) ~ /dir2\$ grep -i "FIRST" demo1

THIS IS THE FIRST LINE IN UPPERCASE.

This is the second line in the file and first line with all its characters in lower case

This Line Has All Its First Character In Uppercase

6) ~ /dir2\$ grep "Second" demo1

this is the second line in the file and first line with all its characters in lowercase

7) ~ /dir2\$ grep -w "word" demo1

~ /dir2\$ cat > example

first word

Second-word

thirdword

~ /dir2\$ grep "word" example

first word

Second-word

thirdword

~ /dir2\$ grep -w "word" example

first word.

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```
~/dir2$ cat >demo1
THIS IS THE FIRST LINE IN UPPERCASE
this is the second line in this file and first line with all its characters in lowercase
This Line Has All Its First Character In Uppercase
This is the last line

^Z
[2]+ Stopped          cat > demo1
~/dir2$ grep "last" demo1
This is the last line
```

```
~/dir2$ cp demo1 demo2
~/dir2$ ls
```

```
~/dir2$ grep "line" demo1 demo2
demo1:this is the second line in this file and first line with all its characters in lowercase
demo1:This is the last line
demo2:this is the second line in this file and first line with all its characters in lowercase
demo2:This is the last line
~/dir2$ grep -i "FIRST" demo1
THIS IS THE FIRST LINE IN UPPERCASE
this is the second line in this file and first line with all its characters in lowercase
This Line Has All Its First Character In Uppercase
~/dir2$ grep "second .* lower" demo1
this is the second line in this file and first line with all its characters in lowercase
```

```
~/dir2$ grep -w "word" demo1
~/dir2$ grep "word" example
first word
second_word
thirdword
~/dir2$ grep -w "word" example
first word
~/dir2$
```