Roll - 1705045

Iftekhar Hakim Kaowsar

Ans. to -1

In computer, total CPU clock cycle = (Multiplication Instruction count × clock cycle for multiplication + Addition count × Addition clock cycle)

For A, CPU time, CPU_A = cycle time × CPU clock cycle

= ~~500ps × Instruction count × CPI~~.

= 500 ps × (3 × 3 + 2 × 2) ps

= 500 × (9 + 4) ps

= 6500 ps

CPU time in B, CPU_B = cycletime × CPU clock cycle

= 450 × (3 × 4 + 2 × 1)

= 450 × (12 + 2)

= 6300 ps

So, CPU time B is less. Hence, regard the program, B's performance is better, as $CPU_A > CPU_B$.

Roll-1705045

20.

Ans. to q. - 2

Here, we will try to modify X_i as a function of A_iB_i and Y_i as a function of c_i.

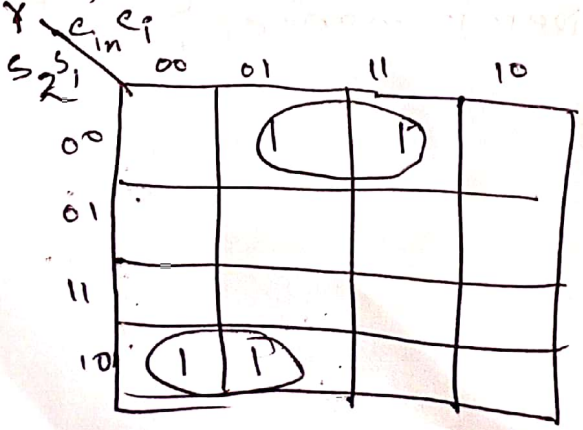
S_2	S_1	C_{in}	X_i	Y_i	F (through Parallel Adder)
0	0	0	A_iB_i	c_i	AB+c
0	0	1	A_iB_i	c_i	AB+c+1
0	1	0	A_iB_i	0	AB
0	1	1	A_iB_i	0	AB+1
1	0	0 (forcefully)	A_iB_i	1	(AB)'
1	1	0 (forcefully)	A_iB_i	0	AB

} In this two, C_{in} = 0 forcefully, (all step)
So, $F = X_i \oplus Y_i$

So,

$X_i = A_iB_i$

For Y_i,



Roll - 1705045

So,

$$Y_i = S_2' S_1' C_i + S_2 S_1' C_{in}'$$

And,

$$Z_i = \overline{S_2}\, C_{Adder,i}$$

Here, C_{Adder} means parallel adder's carry outputs. Specifically, $C_{Adder,0} = C_{in}$