Sardar Vallabhbhai National Institute of Technology, Surat

ECED Department

Subject: Digital Electronics & Logic Design (EC-207)

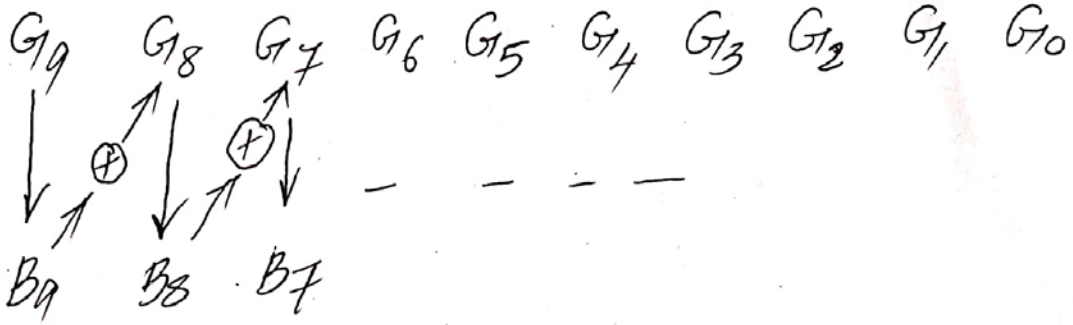
B.Tech Computer, Sem-III, Div – (A&B)

Date: 10-11-2020

Tutorial – 8 Hints/Solutions

Solution to Q1 (5 Marks)

Concept:



$B_9 = G_9$

$B_8 = B_9 \oplus G_8$

$B_7 = B_8 \oplus G_7$

$B_6 = B_7 \oplus G_6$

⋮

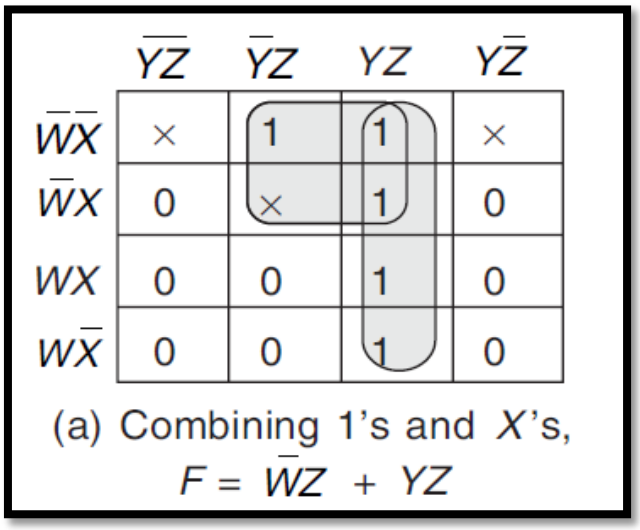
(a) 1100101000

(b) 1010000010

(c) 1101011101

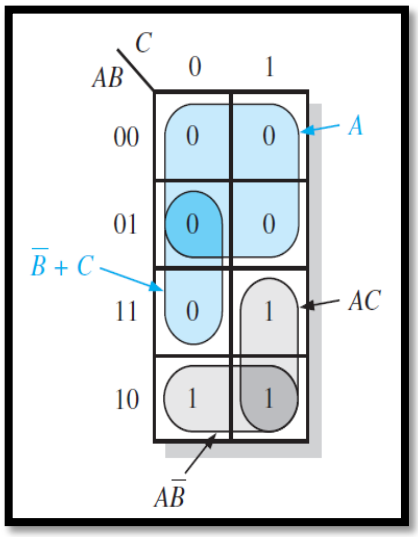
(d) 1111111110

Solution to Q2 (3 Marks)



(a) Combining 1's and X's, $F = \overline{W}Z + YZ$

Solution to Q3 (5 Marks)



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POS:

$$A(\overline{B} + C)$$

SOP:

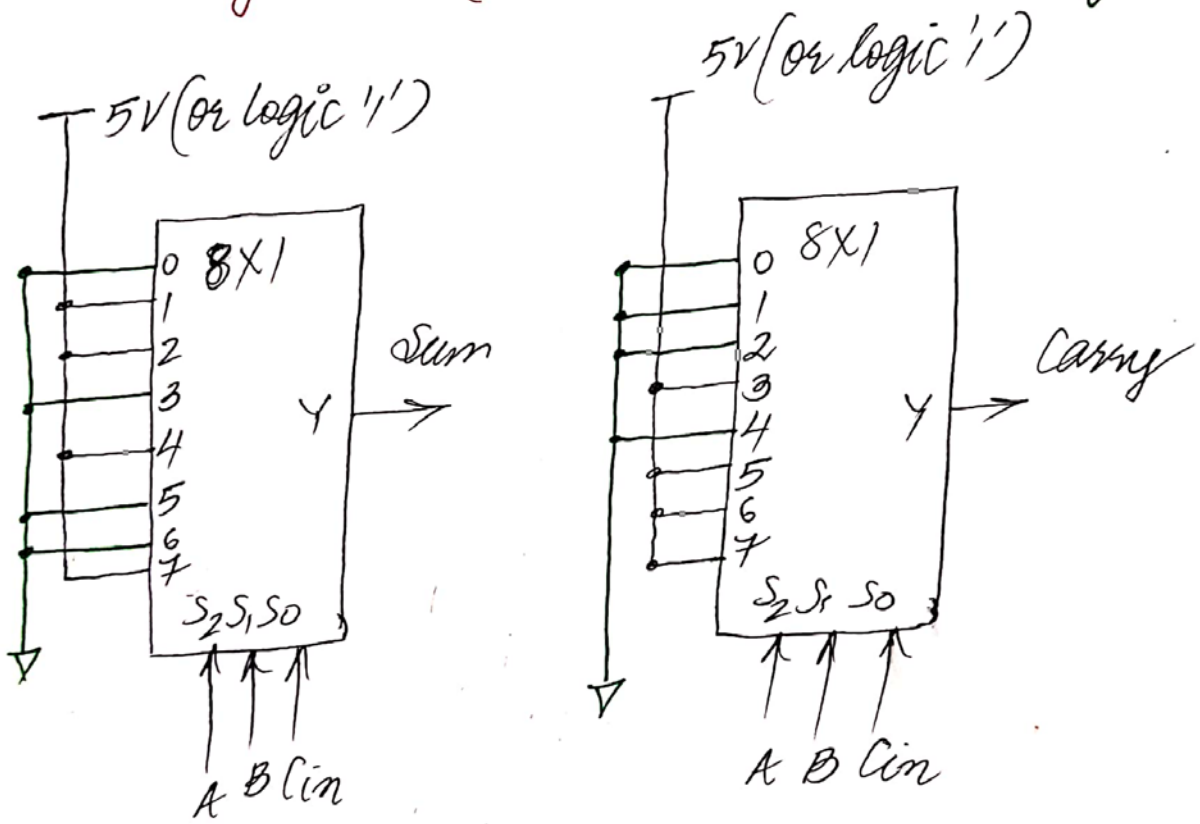
$$A\overline{B} + AC = A(\overline{B} + C)$$

Solution to Q4 (8 Marks)

Full Adder

Sum = $\Sigma m(1,2,4,7)$ → Connect to 5V

Carry = $\Sigma m(3,5,6,7)$ → connect to ground



Same Concept for Full Subtractor

Difference = $\Sigma m(1,2,4,7)$ → Connect to '5V'

Borrow = $\Sigma m(1,2,3,7)$ → Connect to ground

Solution to Q5 (4 Marks)

	I_0	I_1	I_2	I_3	I_4	I_5	I_6	I_7
A'	0	1	2	3	4	5	6	7
A	8	9	10	11	12	13	14	15
	1	1	0	A'	A'	0	0	A