Ahmed Saqif 661925946

A: I took ECSE 2610 CoCo ☑
I took LITEC ☐
I took CSCI-2500 Comp Org ☐
Other ☐

B1: $97_{10} = 1100001_2 = 141_8 = 61_{10}$

B2: $10110101_2 = 181_{10} = 265_8 = B5_{16}$

B3: $-58_{10} \rightarrow 111010 \rightarrow 000101$

~~00111010~~

~~8-bit 2's comp~~

~~A:~~ 11000001
+ 00011010
11011011

00111010 → 11000110
+ 1
8 bit twos comp. 11000110

B4: 01100001
+11000110
00100111 10 overflow

B5: $58_9 \rightarrow 5 \times 9 + 8 = \boxed{53_{10}}$

$53_{10} = 110101_2 \rightarrow \boxed{65_8}$

$\rightarrow \boxed{35_{16}}$

C:

z \ xy	00	01	11	10
0	0	1	0	0
1	0	1	1	1

C1B: $\Sigma_{xyz} = \bar{x}y + yz + xz$

C1C: $\Pi_{xyz} = (x+y)(\bar{x}+z)$

C1D:

C1B: $\Sigma_{xyz} = \bar{x}y\bar{z} + \bar{x}yz + xyz + x\bar{y}z$

C1C: $\Pi_{xyz} = (x+y+z)(\bar{x}+\bar{y}+z)(\bar{x}+y+z)(x+y+\bar{z})$

C1D: $\bar{x}y + yz + xz = \Sigma_{xyz}$

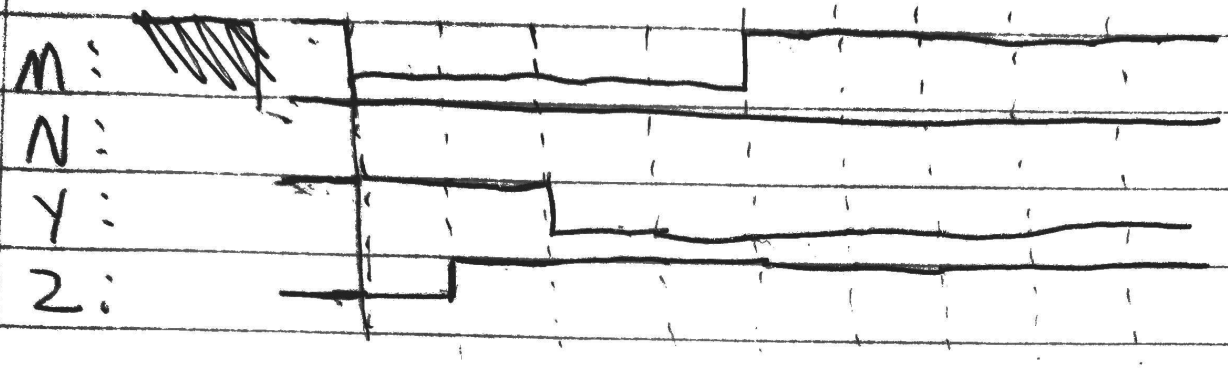
C1B cont: $\bar{x}y + yz + xz : \bar{x}y(z+\bar{z}) + yz(x+\bar{x}) + xz(y+\bar{y})$

$: \bar{x}yz + \bar{x}y\bar{z} + xyz + x\bar{y}z$

C1C cont: $(x+y)z\bar{z}(\bar{x}+z)y\bar{y}$

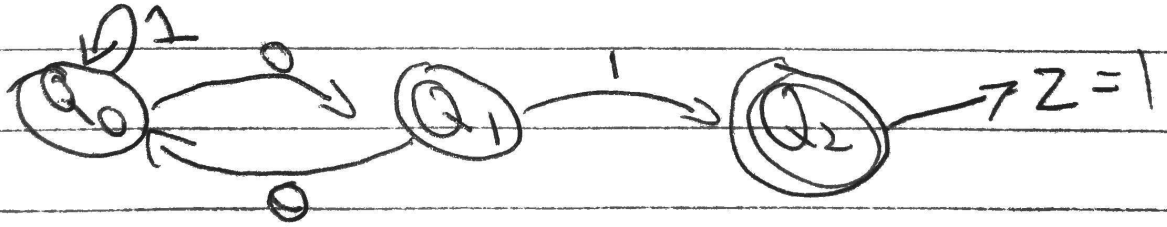
$: (x+y+z)(x+y+\bar{z})(\bar{x}+y+z)(\bar{x}+\bar{y}+z)$

P1:



P2: SRAM and DRAM are forms of IC RAM. RAM is a form of memory that is volatile. It is fast and can be scaled fairly large. DRAM is made of capacitors and transistors and SRAM is made of latches and transistors. Thus SRAM is faster but doesn't scale as well as DRAM

P3:



P4: The output is ready at $t = 3$ ns