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CpE 186
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Collaborated with Sergio Zavala

Homework #8

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a) (NOT (A OR B) AND NOT C OR (E OR D)) AND NOT E

(NOT (AB)OR AND C NOT OR (ED)OR) AND E NOT
((AB)OR NOT AND C NOT OR (ED)OR) AND E NOT
((AB)OR NOT C NOT AND (ED)OR) OR AND E NOT
((AB)OR NOT C NOT AND (ED)OR) OR E NOT AND

AB OR NOT C NOT AND ED OR OR E NOT AND

b) (A+B+C)*((E+B)/(C+D))+F*2

(A+B+C)*((E+B)/(C+D))+F*2
(A B + C +) * ((E B +) / (C D +)) + (F 2 *)
A B + C + E B + C D + / * F 2 * +

2.

c) ECDBA*F/+G-H/*+

(E + (C * (((D + ((B*A)/F)) – G) / H)))

d) ABCDE OR AND AND AND

(A AND (B AND (C AND (D OR E))))

3.

In system programming, an interrupt is a signal to the processor emitted by hardware or software indicating an event that needs immediate attention. Hardware interrupts are used by devices to communicate that they require attention from the operating system.

The priority interrupt bus allows interrupter modules to request interrupts from a device and interrupt handlers may need to use the data-transfer bus at the same time.

4. A virtual memory has the following specification:

- Page size: 4096 words
- Number of virtual pages: 16 (0 to 15)
- Number of physical page frames: 4 (0 to 3)

- Virtual pages currently in physical memory:
  - virtual page 14 in physical page 0
  - virtual page 0 in physical page 1
  - virtual page 10 in physical page 2
  - virtual page 2 in physical page 3

b) List all virtual memory addresses that cause a page fault.

Page	1	4096-8191	
	3	12288-16383	
	4	16384-20479	
	5	20480-24575	
	6	24576-28671	
	7	28672-32767	
	8	32768-36863	
	9	36864-40959	
	11	45056-49151	
	12	49152-53247	
	13	53248-57343	
	15	61440-65535	

c) What is the physical address for the following virtual addresses?

- 3512 s
  3512 → 4096 + 3152 = 7248

- 10512
  10512 → 4096 * 3 + (10512%4096)
  →4096*3 + 2120 = 14408

- 40532
  40532 →4096*2 +(40532%4096)
  →8192 + 2768 = 10960

- 52000
  5200 →4096*0 + (52000%4096)
  → 0 + 1648 = 1648