6. Width of which bus can help us to estimate the physical address space?

   a. Control Bus

   b. Address Bus

   c. Data Bus

   d. None of the above

7. At which step of Instruction Execution Cycle, the value of PC is modified?

   a. Instruction Fetch

   b. Instruction Decode

   c. Operand Fetch from Memory

   d. Execution

   e. Write result back to Memory

8. Which flag is set when the result of an unsigned arithmetic operation is too large to fit into the destination?

   a. OF

   b. SF

   c. ZF

   d. None of the above

9. When an assembly language program is assembled, which file is produced?

   a. Executable file

   b. Object File

   c. All of the above

   d. None of the above

10. What special purpose does the ECX register serve?

    a. Accumulator

    b. Counter

    c. Multiplier

    d. None of the above

11. Central Processing Unit (CPU) is connected to the rest of the computer system using

a. Data Bus

b. Control Bus

c. Address Bus

d. All of the above

e. None of the above

12. When memory is not involved, what step is performed on instruction after decoding in Instruction Execution Cycle?

a. Instruction Fetch

b. Instruction Execution

c. Write result back in Memory

d. Operand Fetch from Memory

13. Which of the following memory unit resides directly inside the CPU?

a. L2 Cache Memory

b. L3 Cache Memory

c. Registers

d. Compact Disk

14. Which register indicates the base address of stack segment?

a. BP

b. SS

c. DS

d. CX

15. What is the range of 8-bit signed number?

a. 256

b. –128 to +127

c. –127 to +128

d. All of the above

16. How to represent 5d in hexadecimal representation?

a. 5o

b. 5h

c. 5b

d. None of the above

17. What the integer expression `(2 + 2 / 2)` will produce?

a. 1

b. 2

c. 3

d. 4

18. How many times the following loop runs?

```
this_is_label:
    jmp this_is_label
```

a. 10 times

b. 1000 times

c. 100000 times

d. Endless times

19. If CX is initialized to 2 before the start of loop, how many times the loop will run?

a. 1

b. 2

c. 3

d. None of the above

20. Which of the following represents four classes of interrupts?

a. Program, Processor, ALU, Registers

b. Program, Timer, I/O, Hardware Failure

c. Processor, Cache, I/O, Hardware Failure

d. All of the above

Q1: (8)

You are given three (8bit) signed binary numbers D, B and C. Evaluate A by using the equation **A = D - B - C** and then convert A into **decimal** where

D = 0011 1110

B = 1101 0101

C = 1101 1011

B = 0110 1010 2's complement

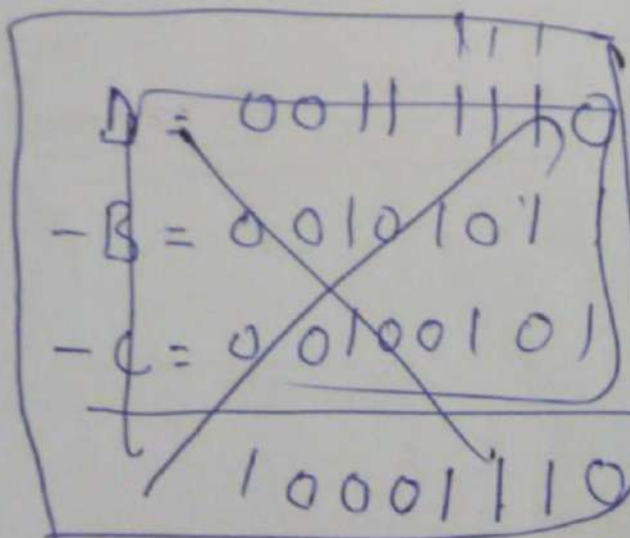
-B = 1(0010 1011) 8 bit only

C = 0110 1011 2's complement

-C = 1(0010 0101) 8 bit only

D = 0011 1110

A = D - B - C



-B 0010 1011

-C 0010 0101

0101 0000

+D 0011 1110

1000 1110

4 every value is positive their sum also be posit

$1\times2^{7}+0\times2^{6}+0\times2^{5}+0\times2^{4}+1\times2^{3}+1\times2^{2}+1\times2^{1}+0\times2^{0}$

Q2: (10)

In the following x86 assembly language code, **underline** the errors in **Wrong Code** and write the corrected version in **Corrected Code**. Marks will be awarded only if the **underlined** error is corrected in the corrected code.

Given Code	Corrected Code
.DaTa	
a DW 0FFFFAh	a DD 0FFFFAh
b DW 0ABCDEh	b DD 0ABCDEh
c DD 1234ACh	
d DW 0AF040h	d DD 0AF040h
.CodE	
MOV AX, a	Mov AX, word ptr a
ADD AX, c	Add AX, word ptr c
MOV AL, 127+128	Mov AL, Byte ptr c
MOV AL, DW PTR c	Destination and source both cannot be constant
SUB 89, 50	
INC A	Cannot move value into CS
MOV CS, 10h	

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