

(81)

1. How many bytes do each of the below registers have?

1 AL 1 BH 4 EAX 2 BX ESI 4

2. How many bytes do each of the directives below allocate when used?

1 DB 4 DD 2 DW 8 DQ

3. The Central Processing Unit essentially consists of 2 different units: the EU and the BIU. Briefly describe the primary responsibility of each of the units.

EU:

Interprets & executes instructions

BIU:

stores & fetches data & fetches instructions & queues instructions

4. In each of the below computations using 8-bit arithmetic ADDITION describe the condition of the Carry Flag and the Overflow flag

0010111
1100111

1111110

CF 0

OF 0

01110100
01100000

11110100

CF 1

OF 1

11000000
01111111

01111111

CF 1

OF 0

11000000
11000000

11000000

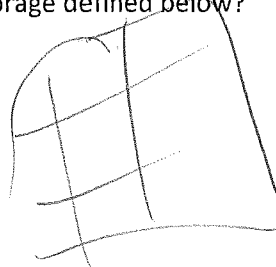
CF 1

OF 0

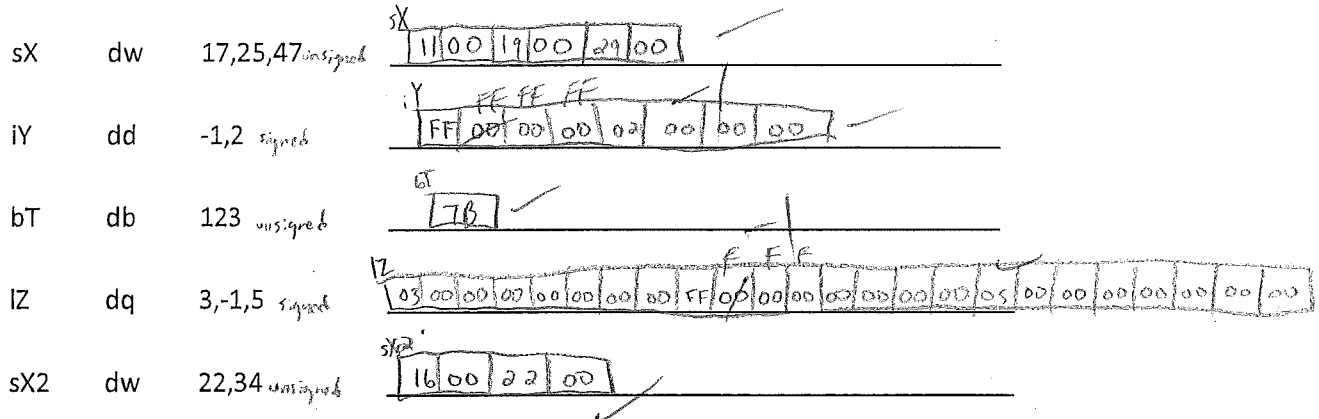
5. What will be in the symbol table for the data storage defined below?

0000 sX dw 3 dup(?)
000b iY dd 2 dup(?)
000E bT db 2 dup("ABC")
001Y lZ dq ?

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6. Describe how the data will appear in memory for the below storage



7. Write either T or F to indicate the assembly instruction is valid or invalid (the identifiers are described in #6). If it is invalid, explain why

F ✓ mov AL, sX AL is 1 byte, sX is 2 bytes

T ✓ mov bT, BH

T ✓ mov eax, iY

T ✓ mov ah, bT+1

F ✓ mov ebx, Iz+4 ebx is 4 bytes, Iz is 8 bytes

F ✓ mov sX2, CX

T ✓ mov iY+4, ebx

2 ✓