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Task 1 and Task 2:

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Section:- 4A

Course: COAL (Lab)

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Q1:-

(a) $(101011010)_2 = (?)_{16}$

Combining 4 bits :-

$\begin{array}{|c|c|c|c|} \hline 0001 & 0101 & 1010 & \\ \hline \end{array}$
added
zeros
bs of 4 bits

So, $0001 = 1$
 $0101 = 5$
 $1010 = 10 = A$

So, $(101011010)_2 = (15A)_{16}$

(b) $(4C)_{16} = (?)_2$

Converting '4' and 'C' into

$4 = (0100)_2$

$C = (12)_{10} = (1100)_2$

So, $(01001100)_2 = (4C)_{16}$

OR

$(1001100)_2 = (4C)_{16}$

(c) $(512)_{10} = (?)_{16}$

So,
 $(512)_{10} = (200)_{16}$

16	512
16	32-0
	2-0

Q2:-

(a) $3A + B7 = F1$

$$\begin{array}{r} 0 \\ 3A \\ + B7 \\ \hline F1 \end{array}$$

(b) $D3 - 1A = B9$

$$\begin{array}{r} D3 \\ - 1A \\ \hline B9 \end{array}$$

$B20 + F3 = \text{C21}$

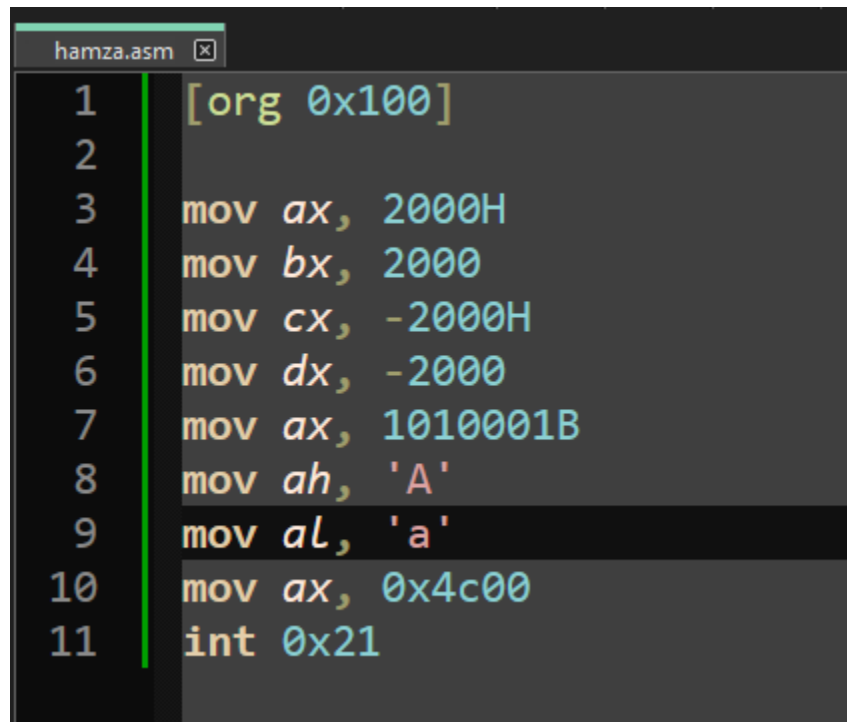
$$(c) \quad B57 - 2A + E3 = (C10)_{16}$$

$$\begin{array}{r} B57 \\ - 2A \\ \hline B2D \end{array}$$

$$\begin{array}{r} \textcircled{1} \textcircled{1} \\ B2D \\ + E3 \\ \hline C10 \end{array}$$

Task 3:

Code file:



```
1  [org 0x100]
2
3  mov ax, 2000H
4  mov bx, 2000
5  mov cx, -2000H
6  mov dx, -2000
7  mov ax, 1010001B
8  mov ah, 'A'
9  mov al, 'a'
10 mov ax, 0x4c00
11 int 0x21
```

Dos-Box:

DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX

```

Welcome to DOSBox v0.74-3

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount X C:\nasm
Drive X is mounted as local directory C:\nasm\

Z:\>X:

X:\>nasm hamza.asm -o hamza.com

X:\>afd hamza.com_

```

Table:

	Lines							
Registers	3	4	5	6	7	8	9	11
AX	2000	2000	2000	2000	0051	4151	4161	4C00
AH	20	20	20	20	00	41	41	4C
AL	00	00	00	00	51	51	61	00
BX	0000	07D0	07D0	07D0	07D0	07D0	07D0	07D0
CX	0018	0018	E000	E000	E000	E000	E000	E000
DX	0000	0000	0000	F830	F830	F830	F830	F830
IP	0103	0106	0109	010C	010F	0111	0113	0116