University of Central Punjab
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FACULTY OF INFORMATION TECHNOLOGY

Computer Organization and Assembly Language

Lab 3	
Topic	1. Mov instruction 2. Add,sub 3. Memory Addressing modes 4. Flag register

Q1: Write a program to solve the following:

Use any addressing mode to access memory variables:

Let
A=150
B=30
C=20

I. Save the sum of these three variables (A+B+C) in ax.
II. Save the result (A-C) in cx.
III. subtract (ah-cl) and save the result in dh.

NOTE: Execute the code in sequence.

Q2: Write a program to solve the following using the address of variable *'B'*:

Use direct addressing mode to access memory variables:

Let
A=150
B=30
C=90

I. Save the sum of these three variables (A+B+C) in ax.
II. Save the result (A-C) in cx.
III. subtract (ah-cl) and save the result in dh.

NOTE: Execute the code in sequence.

Hint: for reference see Question 1 (b) of Part 1

Q3: Write a program to solve the following using the address of variable 'Num3':

Use indirect addressing mode to access memory variables:

Let
Num1: db 10
Num2: db 30h
Num3: db 0x90
Num4: db 0x1A
Num5: db 29

I. Save the sum of these five variables (Num1+Num2+Num3+Num4+Num5) in ax.
II. Save the result (Num2-Num5) in cx.
III. Subtract (cl-ah) and save the result in dl.

Q4: Write a program to solve the following equations:

Assume these variables:

a: db 01110111b

b: db 85

c: dw 280

d: db 67h

e: db 0x42

f: db 0xE4

g: dw 0x1A3C

1. g=(a+b)-c ;save the result back in variable g
2. b=c+f ;when saving the result if value exceeds the size of variable you can ignore higher byte
3. d=e-g ;when saving the result if value exceeds the size of variable you can ignore higher byte
4. c=d+b
5. e=a+g

Note: ***Execute the code in sequence.***

Hint: Observe Q1(g) of Part 1.

Q 5: Write a program to add ten numbers using Direct addressing mode, take address of ***fourth*** variable. Save the sum in a word size variable.

Consider numbers are signed becareful when adding word and byte.

Let

Num1: db 17

Num2: db -50

Num3: dw 0xFACD

Num4: db 250

Num5: dw -100

Num6: db 254

Num7: dw 3400

Num8: dw 0xA2AB

Num9: db 65h

Num10: dw 0x453

SUM: dw 0