**[15] 1)** Write an assembly program that adds the content of Registers R4, R5, and R6 to register R7 then subtract the content of R10 from R7. Once calculation is done all values of aforementioned registers must be saved in memory starting at memory address 0x0200. Use these register values: R4 = 4, R5 = 3, R6 = 10, R10 = 15. The overall program structure should be as follows:

```
Setup        ......              ;clear all registers
             ......              ;Setup Register Values
             ......
Addition     ......              ;Add the content of registers
             ......              ;R4,R5,R6 into R7
             ......
Subtraction  ......              ;subtract content of R10 from R7
             ......
Store        ......              ;Store the content of all Register used
             ......              ;into memory including results in the
             ......              ;Order R4, R5, R6, R10, R7.
             ......
             ......
Mainloop     jmp  Mainloop       ;Infinite Loop
```

[3] 1.a) complete the above assembly program.

[12] 1.b) Answer the Following Questions:

- [2] Record the values of Register prior to program execution
  - R4 0x0004, R5 0x0000, R6 0x0089, R10 0x0000, R7 0x0002, SR 0x0000, NZVC  0000

- [2] Rrecord the values (words) of memory locations starting at location 0x0200
  - 0004, 0003, 000A, 000F, 0002

- [2] Record the values of Registers after program execution
  - R4 0x0004 R5 0x0003 R6 0x000A, R10 0x000F R7 0x0002, SR 0x0001, NZVC  0001

- [2] Rrecord the values (words) of memory locations starting at location 0x0200
  - 0004, 0003, 000A, 000F, 0002

- [2] Why do we need an infinite loop at the end of the program?
  - Ensures that the program only executes up to that point and you can observe the changes that have taken place
- [2] Does the MSP430 Microcontroller support real-time clock?
  - Yes