Assignment 3 - Writeup

Name – Shubham Nemade
Class – SE9
Roll no – 23151 (G9)

a) Explain the status register of PIC18 in detail with respect to the addition operation. Give examples in which status registers gets value (HEX).

i) 10 ii) 18

→ Status register holds the status flag for instruction execution. It is ~~short~~ stored at memory location (0x FD8)

-	-	-	N	OV	Z	DC	C
7	6	5	4	3	2	1	0

N - Negative Bit
1 = Arithematic result is negative
0 = Arithematic result is positive

OV - Overflow Bit
1 = Overflow ocurred for signed arithematic
0 = No. overflow.

Z - Zero flag.
1 = Result of airthematic or logical operation is 0
0 = Non-zero result.

DC - Digit carry.

For ADDWF, ADDLW instruction
1 = carry from 4th low order bit of result has occurred
0 = No carry from 4th law order bit of result has occure

C = carry bit.
For ADDLW, ADDWF, instructions.
1 = A carry out of MSB of result has occured
0 = No carry out of MSB of result.

i) $(10)_{16} = (00010000)_2$
Here, only negative bit is set. This result in the status register may occur only when there is no carry or DC. There is no overflow and there is a non zero arithmetic answer.
The answer of addition must be negative.

eg. 81H
+ 11H
92H
STATUS = 0001 0000

ii) $(18)_{16} = (0001\ 1000)_2$
Here, the negative & overflow flags are set. The answer must have no carry or DC. It must be non-zero & negative

eg. 62H
+ 33H
95H
STATUS = 0001 1000