Operations of Status Flags

Example 5.1:

MOV AX, FFFFH

MOV BX, FFFFH

ADD AX, BX

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	bit
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	AX
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	BX
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	F				F				F				E				

AX= FFFEH

Status Flags:

CF (Carry Flag)	1
PF (Parity Flag)	0
AF (Auxiliary Carry Flag)	1
SF (Sign Flag)	1
ZF (Zero Flag)	0
OF (Overflow Flag)	0

Example 5.2:

MOV AL, 80H

MOV BL, 80H

ADD AL, BL

	7	6	5	4	3	2	1	0	bit
	1	0	0	0	0	0	0	0	AL
	1	0	0	0	0	0	0	0	BL
1	0	0	0	0	0	0	0	0	
	0				0				

AL= 00H

Status Flags:

CF (Carry Flag)	1
PF (Parity Flag)	1
AF (Auxiliary Carry Flag)	0
SF (Sign Flag)	0
ZF (Zero Flag)	1
OF (Overflow Flag)	1

Example 5.3:

MOV AX, 8000H

MOV BX, 0001H

SUB AX, BX

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	bit
	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AX
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	BX
	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	7				F				F				F				

AX= 7FFEH

Status Flags:

CF (Carry Flag)	0
PF (Parity Flag)	1
AF (Auxiliary Carry Flag)	1
SF (Sign Flag)	0
ZF (Zero Flag)	0
OF (Overflow Flag)	1

Example 5.4:

MOV AL, FFH

INC AL / ADD AL, 01hH

	7	6	5	4	3	2	1	0	bit
	1	1	1	1	1	1	1	1	AL
								1	BL
1	0	0	0	0	0	0	0	0	
	0				0				

AL= 00H

Status Flags:

CF (Carry Flag)	0
PF (Parity Flag)	1
AF (Auxiliary Carry Flag)	1
SF (Sign Flag)	0
ZF (Zero Flag)	1
OF (Overflow Flag)	0

Example 5.5:

MOV AX, -5 / XCHG AX, -5

AX=-5

Status Flags:

CF (Carry Flag)	No effect
PF (Parity Flag)	No effect
AF (Auxiliary Carry Flag)	No effect
SF (Sign Flag)	No effect
ZF (Zero Flag)	No effect
OF (Overflow Flag)	No effect

Example 5.6:

MOV AX, 8000H

NEG AX

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	bit
	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AX
	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1^{st} Complement
																1	2^{nd} Complement
	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8				0				0				0				

AX= 8000H

Status Flags:

CF (Carry Flag)	1
PF (Parity Flag)	1
AF (Auxiliary Carry Flag)	1
SF (Sign Flag)	1
ZF (Zero Flag)	0
OF (Overflow Flag)	1