



Student Name: .....Solution..... ID: ..... Grade: .....

Form A:

Write assembly program to calculate the result of 7FFFh+FFFFh and write the status of all six flags?

Solution:

The top screenshot shows the assembly source code in a text editor window titled 'C:\Windows\system32\cmd.exe - td q3a - edit q3a.asm'. The code is as follows:

```

dosseg
.model small
.386
.data
val1 dw 0ffffh
val2 dw 7fffh

.code
main:
mov ax,@data
mov ds,ax

mov ax,val1
add ax,val2

mov ax,4ch
int 21h
end main
    
```

The bottom screenshot shows the program running in a debugger window titled 'C:\Windows\system32\cmd.exe - td q3a - td q3a'. The instruction pointer (EIP) is at 000C, and the carry flag (C) is set to 1. The register values are:

ax	7FFE	c	1
bx	0000	z	0
cx	0000	s	0
dx	0000	o	0
si	0000	p	0
di	0000	a	1
bp	0000	i	1
sp	0000	d	0
ds	17EC		
es	17DB		
ss	17EB		
cs	17EB		
ip	000C		

The instruction being executed is 'mov ax, 004C'. The status bar at the bottom of the debugger window shows: F1-Help F2-Bkpt F3-Mod F4-Here F5-Zoom F6-Next F7-Trace F8-Step F9-Run F10-Menu.