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| Week | Reverse Engineering Malware | Duration |
| 3 | Data Transfers, Addressing, and Arithmetic | 60 mins |

Marks allocation: 2/100 for CA tutorial submission

**Lesson Objectives**

* Understand Data Transfers, Addressing, and Arithmetic in assembly language

1. What will be the value in EDX after each of the lines marked (a) and (b) execute?

.data

one WORD 8002h

two WORD 4321h

.code

mov edx,21348041h

movsx edx,one ; (a)

movsx edx,two ; (b)

**a. edx = FFFF8002h b. edx = 00004321h**

2. What will EAX contain after the following instructions execute?

.data

.dVal DWORD ?

.code

mov dVal,12345678h

mov ax,WORD PTR dVal+2

add ax,3

mov WORD PTR dVal,ax

mov eax,dVal

**eax = 12375678h**

3. (Yes/No): Is it possible to set the Overflow flag if you add a positive integer to a negative integer?

**No**

4. (Yes/No): Will the Overflow flag be set if you add a negative integer to a negative integer and produce a positive result?

**Yes**

5. (Yes/No): Is it possible for the NEG instruction to set the Overflow flag?

**Yes, for example**:

**mov al,−128**

**neg al ; OF = 1**

6. (Yes/No): Is it possible for both the Sign and Zero flags to be set at the same time?

**No**

END