35 pts

Name: _____

Class Day / Time: _____

Due Date: _____

Lab #14 – String Operations

For each question below, assume that the data segment contains

       source   BYTE "brown"
       dest   BYTE "brine"

1) Suppose that the following instructions are executed:

```
lea   esi, source
lea   edi, dest
cld
mov   ecx, 5
repne cmpsb
```

Assuming that ESI starts at 00010000 and EDI starts at 00010005, what will be the values stored in ESI and EDI following the repne cmpsb instruction?
ESI _____
EDI _____

What will be stored in ECX? _____

2) Suppose that the following instructions are executed:

```
lea   esi, source
lea   edi, dest
cld
mov   ecx, 5
repe cmpsb
```

Assuming that ESI starts at 00010000 and EDI starts at 00010005, what will be the values stored in ESI and EDI following the repe cmpsb instruction?
ESI _____
EDI _____

What will be stored in ECX? _____

3) Suppose that the following instructions are executed:

mov   al, 'w'
lea   edi, dest
cld
mov   ecx, 5
repe scasb

Assuming that EDI starts at 00010005, what will be the value stored in EDI following the repe scasb instruction?
EDI _____

What will be stored in ECX? _____

4) Suppose that the following instructions are executed:

mov   al, 'n'
lea   edi, dest
cld
mov   ecx, 5
repne scasb

Assuming that EDI starts at 00010005, what will be the value stored in EDI following the repne scasb instruction?
EDI _____

What will be stored in ECX? _____

5) Suppose that the following instructions are executed:

mov   al, '*'
lea   edi, dest
cld
mov   ecx, 5
rep stosb

Assuming that EDI starts at 00010005, what will be the value stored in EDI following the rep stosb instruction?
EDI _____

What will be stored in ECX? _____

What will be stored in the destination string? _____

6) Suppose that the following instructions are executed:

```
        lea   esi, source
        lea   edi, dest
        cld
        mov   ecx, 5
for6:   lodsb
        inc   al
        stosb
        loop  for6
endFor6:
```

Assuming that ESI starts at 00010000 and EDI starts at 00010005, what will be the values stored in ESI and EDI following the for loop?

ESI _____

EDI _____

What will be stored in ECX? _____

What will be stored in the destination string? _____

7) Suppose that the following instructions are executed:

```
lea   esi, source
lea   edi, dest
cld
mov   ecx, 3
rep   movsb
```

Assuming that ESI starts at 00010000 and EDI starts at 00010005, what will be the values stored in ESI and EDI following the rep movsb instruction?

ESI _____

EDI _____

What will be stored in ECX? _____

What will be stored in the destination string? _____

8) Suppose that the following instructions are executed:

```
lea   esi, source+4
lea   edi, dest+4
std
mov   ecx, 3
rep   movsb
```

Assuming that ESI starts at 00010010 and EDI starts at 00010015, what will be the values stored in ESI and EDI following the rep movsb instruction?

ESI _____

EDI _____

What will be stored in ECX? _____

What will be stored in the destination string? _____

9) Suppose a two-dimensional array of doublewords has three logical rows and four logical columns. If ESI is used as the row index, what value is added to ESI to move from one row to the next?

10) Suppose a two-dimensional array of doublewords has three logical rows and four logical columns. Write an expression using ESI and EDI that addresses the third column in the second row. (Numbering for rows and columns starts at zero.)