MILITARY INSTITUTE OF SCIENCE AND TECHNOLOGY

Department of Computer Science and Engineering (CSE)

Level-3, Term-I, Course: CSE-306, Microprocessors, Micro-controllers, and Assembly Language Sessional

(Practice Problem)

1.

Write an assembly program that finds the sum of the following series up to n terms:

0, 2, 4, 6, 8, ... …

You must take n as an input.

Input	Output
Enter n: 10	Sum = 90
Enter n: 3	Sum = 6

For decimal input-output write procedures.

2.

Write an assembly program that will ask the user to input 10 numbers and display the sum of these numbers.

You must take n as an input.

Input	Output
Enter 10 elements: 11 2 3 4 5 6 7 8 9 10	Sum : 65
Enter 10 elements: 1 1 1 1 1 1 1 1 1 1	Sum : 10

For decimal input-output write procedures.

3.

Write an assembly program that will ask the user to input 10 numbers and display the total number of even numbers.
You must take n as an input.

Input	Output
Enter 10 numbers: 11 2 3 4 5 6 7 8 9 10	Number of even numbers: 5
Enter 10 elements: 1 1 1 1 1 1 1 1 1 1	Number of even numbers: 0

4.

Write an assembly program that will take inputs until enter pressed and display the characters in reverse order.

Input	Output
abcdef	fedcba
12345	54321

5.

Write an assembly program that prompts the user to enter a string of decimal digits, ending with a carriage return (**0DH**), and prints their sum in the next line. If the user enters an illegal character, it will ignore the character.

Input	Output
ENTER A DECIMAL DIGIT STRING: 1299843	Sum = 36
ENTER A DECIMAL DIGIT STRING: 00g001	Sum = 1

6.

Write an assembly program that takes an input n (**range: 0-9**) and displays the following pattern.

Input	Output
Enter n: 5	1 2 2 3 3 3 4 4 4 4 5 5 5 5 5
Enter n: 4	1 2 2 3 3 3 4 4 4 4

7.

Write an assembly program that takes an input n (**range: 0-9**) and displays the following pattern.

Input	Output
Enter n: 5	1 0 1 1 0 1 0 1 0 1 1 0 1 0 1
Enter n: 4	1 0 1 1 0 1 0 1 0 1

8.

Write an assembly program that takes an input n (**range: 0-9**) and displays the following pattern.

Input	Output
Enter n: 5	* * * * * * * * * * * * * * *
Enter n: 4	* * * * * * * * * *

9.

Write an assembly program that takes an input n (**range: 0-9**) and displays the following pattern.

Input	Output
Enter n: 5	5 4 4 3 3 3 2 2 2 2 1 1 1 1 1
Enter n: 4	4 3 3 2 2 2 1 1 1 1

10.

Binary-coded decimal (BCD) is a class of binary encodings of decimal numbers where each digit is represented by a fixed number of bits, usually four or eight.

Decimal	**BCD** **8 4 2 1**	**BCD** **2 4 2 1**
0	0000	0000
1	0001	0001
2	0010	0010
3	0011	0011
4	0100	0100
5	0101	1011
6	0110	1100
7	0111	1101
8	1000	1110
9	1001	1111

Now write a code in **Assembly Language** which will take **BCD (8 4 2 1)** input from the user and display in **BCD (2 4 2 1)**.

Input	**Output**
0011	0011
1001	1111

Note: You can not use any library file.