

Computer Organization and Assembly Language

Assignment # 2

Due Date: 4th – April -2023 11:59 pm

Note:

- **Deadline will not be extended you have enough time start working on the assignment right away**
- **Submission folder will be on moodle**
- **Submit MARS mips files in a compressed folder with your name and roll number as file name and MARS files should have name of questions like q1 etc. All q2 parts must be in a single asm file**
- **Viva will be conducted for the marking of this assignment**
- **Each question is of 20 marks**

1. Write a program to add three number. Prompt the user to enter three numbers. If sum of these three numbers is greater than 10, print “ sum is greater than 10” else print “ sum is less than or equal to 10”.
2. Write programs to evaluate the following expressions. The user should enter the variables, and the program should print back an answer. Prompt the user for all variables in the expression, and print the results in a meaningful manner. **The results should be as accurate as possible.**
 - a. $x = y + z + 10$
 - b. $a = (b - 3) + 2c$ (do not use multiply instruction)
3. Implement a program to do a bitwise complement (NOT) of an integer number entered by the user. You should use the XOR operator to implement the NOT, do not use the NOT operator. Your program should include a proper and useful prompt for input, and print the results in a meaningful manner.
4. Implement a program to calculate the 2's complement of a number entered by the user. The program should only use the XOR and ADD operators. Your program should include a proper and useful prompt for input, and print the results in a meaningful manner.

5. Declare 20 word size array “Arr” with random values. Add odd index numbers and display with a proper prompt.