

**COMSATS University Islamabad, Lahore** **Campus**

**Assignment 3– FALL 2020**

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| Course Title: | Microprocessor and Assembly Language | | | | Course Code: | | CSC321 | Credit Hours: | 3(2,1) |
| Course Instructor/s: | Sheeza Zaheer | | | | Programme Name: | | BCS | | |
| Semester: | 4 | Batch: | SP19 | Section: | A, B, C | | Date: |  | |
| **Deadline:** |  | | | | **Maximum Marks:** | | | **20** | |
| Student’s Name: |  | | | | Reg. No. |  | | | |
| **Important Instructions / Guidelines:**   * Be precise and to the point while answering any question. * Show all immediate steps. Every step carry individual mark. * **Cheating will result in negative marking and even worse. Stay honest.** | | | | | | | | | |

**Question 01:** For each of the following instructions, give the source offset address and the contents stored in the destination. Consider following initial values.[**Marks: 2\*5 = 10**]

**AX =** 0000h, **DX =** 0000h, **BX =** 0102h, **DI** = 0000h

**ARR** DW ‘BC34’, 0Ah, 57AEh

**Note:** The starting offset address of variable ARR is 0102h. Assume that these instructions are being executed in a sequence (i.e. dependent on previous register values).

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Instructions** | **Source Offset Address (in hex)** | **Contents stored (in hex)** |
| A. | LEA BX, ARR + 3 |  |  |
|  | MOV DI, BX |  |  |
|  | ADD AL, [DI + 1] |  |  |
|  | MOV DX, -2[BX] |  |  |
|  | SUB 3[BX], AX |  |  |

**Question no 2:** Given a row vector and a column vector and their corresponding sizes. Write a program that can multiply a row vector with a column vector . Also, your program should indicate when the multiplication is not possible**. [Marks: 10]**

(You can use MUL instruction)