

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

**Final LAB Examination – Fall 2020**

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| Course Title: | Fundamental Programming lab | | | | Course Code: | | |  | | CSC103 | | Credit Hours: | 1 |
| Course Instructor/s: | Faisal Mumtaz | | | | Programme Name: | | |  | | BSE | | | |
| Semester: |  | Batch: |  | Section: | B | | |  | | Date: | Dec 30, 2020 | | |
| **Time Allowed:** | **180 Mins** | | | |  | | **Maximum Marks:** | | | | **50** | | |
| Student’s Name: | **Adeel Ahmad** | | | | Reg. No. |  | | | **FA20-BSE-031** | | | | |
| **Important Instructions / Guidelines:** | | | | | | | | | | | | | | |

**Question :1**  **[15 Marks]**

A logistics company uses the following methodology for transporting cargo items from one city to the other:

1. Each destination is divided into zones based upon the transit time from the source according to the table below:

|  |  |
| --- | --- |
| **Zone** | **Transit Time (hrs.)** |
| A | 1 – 5 |
| B | 5 – 10 |
| C | Above 10 |

1. Tariff is computed based upon weight range and zone as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Weight**  **(kg)** | **Zone Rates (Rs.)** | | |
| **A** | **B** | **C** |
| upto 1 | 150 | 200 | 250 |
| 1 - 5 | 150 + 50 per kg | 200 + 75 per kg | 250 + 100 per kg |
| Above 5 kg | 400 + 25 per kg | 575 + 50 per kg | 750 + 75 per kg |

1. For the time being company only supports transporting goods to four cities: Karachi, Lahore, Islamabad and Abbottabad

|  |  |
| --- | --- |
| **City** | **Zone** |
| Lahore | A |
| Islamabad | B |
| Karachi | C |
| Abbottabad | B |

Write a program that will calculate Fares on the Basis luggage weight and Zone of Destination.

**Question :2** **[15 Marks]**

1. Write a function called mergeArrays. It should accept three integer arrays: A, B and C, and two integers m and n representing the sizes of the first two arrays. It can be assumed that the size of C is m+n. Arrays A and B contains integers that are already sorted in the ascending order (i.e. increasing order). Your function must combine all the numbers in A and B and store them C in such a way that C is also sorted in the ascending order. Here is an example to clarify the requirements. In this case, the sizes of A and B are 6 and 4 respectively.

A : 0 4 5 5 7 9 B: -1 0 3 6 C: -1 0 0 3 4 5 5 6 7 9

1. Then you have to separate odd and even integers in two separate arrays respectively.

**Question :3**

Project + Viva **[20 Marks]**