|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course Name:** | **Design and Analysis of Algorithms** | **Course Code:** | **CS302** |
| **Degree Program:** | **BS(CS)** | **Semester:** | **Spring 2020** |
| **Duration:** | **20 Minutes** | **Total Marks:** | **4+3+3** |
| **Date:** | **Feb 21, 2020** | **Weight** | **2.5** |
| **Section:** | **6C** | **Page(s):** | **1** |
| **Exam Type:** | **Quiz** |  |  |
| **Student : Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section:\_\_\_\_\_\_\_** | | | | |
| **Instruction/Notes:** | Attempt the quiz on this sheet and write concise answers. | | | |

**Q1)** You are given a 2D sorted array (elements are in ascending order in each row and column) of size NxN. Your task is to devise a *linear time* algorithm to find an element in the 2D array.

**Q2)** Assume that , and . What is in terms of big O notation?

**Q3)** Justify your answer whether the following recurrences can be solved using Master theorem. **Note**: Show your working on the other side of the page.