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| **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:** | **Discrete Structures** | **Course Code:** | **CS-1005** |
| **Program:** | **Computer Sciences** | **Semester:** | **Fall 22** |
| **Date of Assignment** | **October 28, 2022** | **Total Marks:** | **100** |
| **Due of submission** | **November 3, 2022** | **Roll No:** |  |
| **Section:** | **All** | **Page(s):** | **2** |
| **Evaluation** | **Assignment-2** |  |  |
| **Instruction/Notes:** | Solve assignment on A4 page and submit on due date | | | |

1. For each of the following statement, determine whether thestatement is true or false. Prove if it is true, and give a counterexampleif it is false.
2. For all integers , and if then or
3. For all real numbers and ,
4. If and are integers and , does does Explain.
5. Prove that for any nonnegative integer , if the sum of the digits of is divisible by 3, then is divisible by 3.
6. For all real numbers and ,
7. Prove that for all integers and , if and then
8. Prove that if , and *k* are integers and ,

then

1. For any odd integer ,
2. For any odd integer ,
3. For all integers and, if then
4. Use proof by contradiction to show that every integer greater than 11 is a sum of two composite numbers.