| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
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| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course Name:** | **Digital Logic Design** | **Course Code:** | **EE1005** |
| **Degree Program:** | **BS-CS** | **Semester:** | **Spring 2024** |
| **Due Date:** | **25th March, 2024** | **Weight** |  |
| **Section:** | **A & B** | **Page(s):** |  |
| **Exam Type:** | **Assignment # 3** | **Total Marks:** |  |
| **Student : Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section:\_\_\_\_\_\_\_** | | | | |
| **Instruction/Notes:** | Attempt all questions. Programmable calculators are not allowed. | | | |

The questions highlighted in black are to be submitted as the assignment, while those highlighted in red are for practice.

**Question 1:**

**Create a combinational circuit designed to compute the 9's complement of a BCD number. The 9’s complement of a digit is acquired by subtracting that digit from 9. For instance, the 9’s complement of 5 (BCD 0101) is 4 (BCD 0100).**

1. **Using gates**
2. **Quad 8x1 MUX**
3. **Using a decoder**

**Question 2:**

**Design a BCD adder/subtractor circuit.**

**Question 3:**

**Solve the following questions from the exercise of Book Morris Mano 5th edition:**

**3.30**

**3.31**

**3.32**

**3.33**

**3.34**

**3.35**

**3.36**

**3.37**

**3.38**

**3.39**

**3.41**

**3.42**

**3.47**

**3.42**

**3.48**

**3.49**

**3.55**

**3.57 and 3.58**