National University of Computer and Emerging Sciences
Lahore Campus

0118

Digital Logic Design (EE1005)

Lab final Exam

Date: May 22nd 2024 1:00 PM – 4:00 PM

Total Time (Hrs): 2.5
Total Marks: 50
Total Questions: 2

Course Instructor(s)
Ms. Abeer Bashir
Ms. Saira Arif
MS. Ayesha Ejaz
Ms. Shazia Hussain
Ms. Azka Choudhry
Ms. Anum Tariq
Ms. Mahnoor Sami
Mr. Salman Mubarik
Mr. Zummar Saad

Roll No _____ Section _____ Student Signature _____

All CS sections

Attempt all the questions.

Instructions:

- **Save your .cct file with your roll number and Question number**
- **Take screen shot of your circuit before you quit**
- **Make folder, name it with Roll number and your Name**
- **Put your .cct files and screen shots in the Zip/compressed folder and submit**
- **Zip/compress it and submit to allocated folder**
- **Show the required steps and label properly to get the full credit**
- **Solve the paper in the sequence provided in the question paper i.e Question 1 should be solved before question 2 on answer sheet**

CLO 4: Construct and utilize thye basic functional block to design combinational circuit

Q1: Design a up-down counter from 0-7 and 7-0 such that when counter moves up/down it should indicate its change of numbers on two separate seven segment devices. [10+15]

CLO 5: Design and demonstrate synchronous/asynchronous

Q2: Design a circuit that has input X (A, B, C, D) and one output Y. The output will be equal to logic 0 when the binary value of the input X (A, B, C, D) is equal to X1, X2, X3 or X4. The output is logic 1 otherwise. These four binary values of input X are derived from your Roll No. i.e. If Roll No is 23-1234 so the binary value of
X1= (1stdecimal digit of your Roll No + 4) = 1+4 = 0101
X2= (2nd decimal digit of your Roll No + 4) = 2+4 = 0110
X3= (3rddecimal digit of your Roll No + 4) = 3+4 = 0111

X4 = (4 th decimal digit of your Roll No +4) = 4+4 = 1000

- Implement the designed circuit in Logic Works
- Submit the truth table and circuit Diagram

[10+15]