National University of Computer & Emerging Sciences, Karachi
Department of Computer Science
SPRING 2022

Course Code: EE-1005	**Course Name:** Digital Logic Design
Course Teacher: Hamza Ahmed	**Assignment No:** 01

Instructions for Submission:

1. *Use A4 size paper for solution of each Question.*
2. *You are required to Submit Assignment in hardcopy and also upload scanned copy on Google classroom.*
3. *The deadline for submission is **27st February,2022.***
4. ***Copying is not allowed at all.** Any similarities among the submitted files of any student will result in **zero marks**.*

CLO #01 (Total Marks -10)

1. Give the value of each digit in the following decimal numbers:
(a) 6345 (b) 278536

2. Convert the following binary numbers into decimal:
(a) 101110001 (b) 10110011

3. Convert each binary number to decimal:
(a) 1011110.1010 (b) 1111101.11011

4. Convert each decimal fraction to binary using repeated multiplication by 2:
(a) 0.3456 (b) 0.9232

5. Convert each decimal number to binary using repeated division by 2:
(a) 47 (b) 63

6 . Determine the 1's complement of each binary number:
(a) 1001110 (b) 101110101

7. Determine the 2's complement of each binary number using either method:
(a) 11001101 (b) 11010111

8. Express -121 as

(a) an 8-bit sign-magnitude number.

(b) an 8-bit number in the 1's complement form.

(c) as an 8-bit number in the 2's complement form.

9. Determine decimal value of signed binary number i.e. 10011001 in;

(a) an 8-bit sign-magnitude number.

(b) an 8-bit number in the 1's complement form.

(c) as an 8-bit number in the 2's complement form.

10. Convert each binary number to Gray code:

(a) 11011 (b) 1001010 (c) 1111011101110

11. Convert each Gray code to binary:

(a) 1010 (b) 00010 (c) 11000010001