**Digital Logic Design Assignment 1 CLO1 Due Date: :10-09-:2025**

 **Session (2024-2028) Marks: 30**

**Instructions:**

**Part 2 should be submitted in MS WORD format and it should be plagiarism free.**

**Question No. 1 [10]**

1. Perform the following division in binary 1110011$÷$101, 111011$÷$110
2. Convert Decimal 5134 to both BCD and ASCII codes, for ASCII, an odd parity bit is to be appended at the left.
3. Find the summation of two BCD numbers 679 and 876 and show all necessary steps needed.
4. Find the 9’s complement of 6027 and express it in 2421 code. Also show that 2421 is a self-complementing code.
5. The state of a 12-bit register is 100010010111. What is the content if it represents:
* Three decimal digits in BCD?
* Three decimal digits in excess-3 code?
* Three decimal digits in 8,4, -2, -1 code?
* A binary number?

**Question No. 2 [20]**

1. What is the difference between analog signals and digital signals? Give at least two real-life examples of each.
2. Explain the importance of number systems in digital electronics. Why do we use binary numbers instead of decimal numbers in digital circuits?
3. What are the binary logic levels? What is the meaning of high impedance states?
4. Differentiate between Fan-in and Fan-out in digital logic design. Give examples of each. Why are they important in circuit design?