JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- 2023
B.Tech-III Semester (ECE)

COURSE CODE(CREDITS): 18B11EC312(4)   MAX. MARKS: 15
COURSE NAME: Digital Electronics and Logic design
COURSE INSTRUCTORS: Er. Munish Sood   MAX. TIME: 1 Hour

Note: (a)All questions are compulsory. Scientific calculators are not allowed.
(b)Marks are indicated against each question in square brackets.
(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1) Carry out the following operations.   **[3] CO-1**

a) $(10A4)_{16} = (\quad)_2$

b) $(A85)_{16} = (\quad)_{10}$

c) $(650)_{10} = (\quad)_{16}$

d)   Add $(DF)_{16} + (AC)_{16}$

e) $(7526)_8 = (\quad)_2$

f) $(125)_8 = (\quad)_{10}$

Q2) Add the following BCD numbers $01100111 + 01010011$ **[2] CO-1**

Q3) Perform the subtraction of signed numbers $10001000 - 11100010$ **[2] CO-1**

Q4) Simplify the following Boolean expression $[A\bar{B}(C+BD) + \bar{A}\bar{B}]$ C using Boolean Algebra.   **[2] CO-2**

Q5) Simplify the following Boolean expression $\overline{AB + AC} + \bar{A}\bar{B}C$ using De-Morgan's theorm.   **[2] CO-2**

Q6) Use Karnaugh map to minimize the following Product of Sum expression and convert it to a standard Sum of product expression   **[4] CO-2**

$(B+C+D)(A+B+\bar{C}+D)(\bar{A}+B+C+\bar{D})(A+\bar{B}+C+D)(\bar{A}+\bar{B}+C+D)$