

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- 2026

B.Tech-III Semester (IT)

COURSE CODE (CREDITS): 25B11CI314 (3)

MAX. MARKS: 15

COURSE NAME: Digital Systems and Computer Organization

COURSE INSTRUCTOR: Er. Munish Sood

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is not allowed

Q.No	Question	CO	Marks
Q1	a) Add the following BCD numbers 00100011+00010101 b) Convert $(10001101010001101111)_2$ to hexadecimal c) Convert $(1C)_{16}$ to decimal. d) Convert $(7526)_8$ to binary. e) Convert the decimal number 2469 to BCD.	1	5
Q2	a) Simplify the following Boolean expression using Boolean algebra $[A\bar{B}(C + BD) + \bar{A}\bar{B}]C$ b) Apply De-Morgan's theorem to the following expression $\overline{(\bar{A} + B) + CD}$	1	3
Q3	Use the Karnaugh map to minimize the following SOP expression $BCD + \bar{A}B\bar{C}\bar{D} + AB\bar{C}\bar{D} + \bar{A}\bar{B}CD + \bar{A}\bar{B}C\bar{D} + \bar{A}B\bar{C}D + \bar{A}B\bar{C}\bar{D} + ABC\bar{D} + A\bar{B}C\bar{D}$	2	3
Q4	Design a two bit magnitude comparator using truth table and K-Map.	2	4