

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-IV Semester (CSE/IT)

COURSE CODE (CREDITS): 18B11CI414 (03)

MAX MARKS: 25

COURSE NAME: Discrete Computational Mathematics

COURSE INSTRUCTOR: Dr. Saurabh Sharma

MAX. TIME: 1 Hour 30 Min

- 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	What is a relation? List the properties of equivalence relation with a small example.	CO3	5
Q2	Using truth table, examine the validity of the following argument. If I try hard and I have talent, then I will become an engineer. If I become an engineer, then I will be happy. Therefore, if I will not be happy, then I did not try hard or I do not have talent.	CO4	5
Q3	Give set $A = \{a, b, c, d\}$, $B = \{c, d, e, f\}$ and $C = \{f, g, h, i\}$. Draw Venn diagram of (1) $A \cap B$ (2) $A \cup B$ (3) $A \cap B \cap C$ (4) $A \cap C$ (5) $A \cup B \cup C$	CO3	5
Q4	<p>a) Apply DFS and b) BFS on the above graph by taking 0 as starting node.</p>	CO5	6
Q5	Let A be the set $\{1, 2, 3\}$ and R be the relation $R = \{(1, 2), (2, 3), (3, 1)\}$. (a) Draw the digraph for the relation. (b) Determine the transitive closure of R.	CO3	2 2