Department of Computer Science & Engineering
BABU BANARASI DAS
NORTHERN INDIA INSTITUTE OF TECHNOLOGY

Affiliated to Dr. A.P.J. Abdul Kalam Technical University (AKTU Code : 056)
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AKTU Code : 056

CSE SECOND YEAR / THIRD SEMESTER / 2024-25

ASSIGNMENT NO. : 01

1. **Name of Subject: Discrete Structures and Theory of Logic**

2. **AKTU Subject Code: BCS-303**

3. **NBA Subject Code : C201**

4. **Unit Covered: 1**

5. **Date of Issue : 14/10/2024**   **Last Date of Submission: 18/10/2024**   **Max Marks: 25**

Q #	Question Description	CO	BTL	MM
1	Prove that for any two sets A and B, a. $(A \cup B)' = A' \cap B'$ b. $(A \cap B)' = A' \cup B'$	CO 01	III	5
2	In a lattice if $a \leq b \leq c$, then show that a. $a \vee b = b \wedge c$ b. $(a \vee b) \vee (b \wedge c) = (a \vee b) \wedge (a \vee c) = b$	CO 01	III	5
3	Describe each of following in set builder form: a. $A = \{-4, -3, -2, -1, 0, 1, 2, 3\}$ b. $B = \{1, 8, 27, 64\}$ c. $C = \{3, 6, 9, 12, 15, ...\}$	CO 01	III	5
4	Draw the Hasse diagram of $(A, \leq)$, where $A=\{3,4,12,24,48,72\}$ and relation $\leq$ be such that $a \leq b$ if a divides b.	CO 01	III	5
5	In a group of 100 students, 72 students can speak English and 43 students can speak Hindi. Based on these data, answer the following questions: a. Find the number of students who can speak English only. b. Find the number of students who can speak Hindi only. c. Find the number of students who can speak both English and Hindi.	CO 01	III	5

CO: Course Outcome   *BTL: Bloom's Taxonomy Level*   *MM: Max Marks*

Name of Faculty: ALIZA RAZA RIZVI