

Fall 2023

Discrete Mathematics

Assignment No. 1

Section Incharge: Mr. Muhammad Nadeem

Total Marks: 10

Due date: 13th November 2023

Question 1:

Marks=05

Verify the logical equivalence using the laws of logic and give reason for each step.

$$(p \wedge (\sim (\sim p \vee q))) \vee (p \wedge q) \equiv p$$

Question 2:

Marks=05

Prove the identities by using Membership table:

- I. $(A \cap B) \cup (A \cap B^c) = A$
- II. $A \cup (A \cap B) = A$