AMRITSAR GROUP OF COLLEGES

Autonomous status conferred by UGC under UGC act-1956, (2f), NAAC-A Grade

Discrete Structures

ACDS 16402

Assignment 1

1. i) If A = {1,2,{1,3},∅} determine A – {1,2}.
   ii) Draw the venn diagram of A∩ $(B \cup C)$.
   iii) Let R be the set of a relation on A = {2,3,4,5,6} defined by ' x is relatively prime to y'. Write R as a set of ordered pair.

   iv) Let R be relation on A ={1,2,3,4} defined by ' x is less than y'. Write R as a set of ordered pairs. Find the inverse of the relation R. Can inverse of R be defined in words

   v) Define into function with example.

   vi) Let R be the relation defined on set X= {0,1,2,3,…….} of a non negative integers defined by the equations $x^2+y^2=25$. Write R as a set of ordered pairs.

2. Let A= B = {1,2,3,4,5}.Define functions f:A→B such that i) f is one one and onto
   ii) f is neither one one nor onto. iii) f is one one but not onto.

   iv) f is onto but not one one.

3. Prove that A ∪ $(B - A) = A \cup B$.

4. Determine whether or not each of the following is a partition of the set N of positive integers

   a) {{n:n>5},{n:n<5}} b) {{n:n>5},{0},{1,2,3,4,5}}

   c) {{n:n^2>11},{n:n^2<11}}.