Unit - V

5. a) What is the transitive closure. Also write the Warshall's algorithm for that **(8)**

    b) Let A = Z set of integers relation R defined in A by aRb as 'a is congruent to b mod 2'. Show that R is an equivalence relation. **(8)**

OR

5. a) Let R be an equivalence relation on A, and let p be the collection of all distinct equivalence classes [a] for $a \in A$. Then show that P is a partition of A and R is the equivalence relation determine by P. **(8)**

    b) In the set of natural number N = {1, 2, ...} show that the relation defined as a $R \ b \Leftrightarrow a = b^k$ for $a, b, \ k \in N$ is a partial order relation. **(8)**

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