**22MAT121-Discrete Mathematics**
**AIE-A**

**SET-A**

1. Determine whether the relation $R = \{(f,\ g)|\ f(0) = g(0)$ or $f(1) = g(1)\}$ defined on the set of all real-valued functions is reflexive, symmetric, and/or transitive. [5 Marks]

2. Find the transitive closure of the relation $R = \{(a, c), (b, d), (c, a), (d, b), (e, d)\}$ defined on $A = \{a, b, c, d, e\}$ using Warshall's algorithm. [5 Marks]

**22MAT121-Discrete Mathematics**
**AIE-A**

**SET-B**

1. Find the transitive closure of the relation $R = \{(b, c), (b, e), (c, e), (d, a), (e, b), (e, c)\}$ defined on $A = \{a, b, c, d, e\}$ using Warshall's algorithm. [5 Marks]

2. Determine whether the relation $R = \{(f,\ g)|\ f(0) = g(0)$ and $f(1) = g(1)\}$ defined on the set of all real-valued functions is reflexive, symmetric, and/or transitive. [5 Marks]

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