**Jaypee Institute of Information Technology**

**Database Systems & Web (15B11CI312)**

**(Lossless Join, Dependency preservation)**

Q1. Let a relation R(A,B,C,D) and set a FDs F = { A -> B , A -> C , C -> D} are given.

A relation R is decomposed into -

R1 = (A, B, C) with FDs F1 = {A -> B, A -> C}, and

R2 = (C, D) with FDs F2 = {C -> D}.

Check for dependency preservation.

Q2. Consider schema R=(ABCD), Decomposition = {R1= AB, R2= BC, R3= CD } subjected to F = { A→B, B→C, C→D, D→A }. Is D→A lost in the projections?

Q3. Consider the schema R=ABCD, subjected to FDs F= { A → B, B → C }, and the Non-binary partition D1 = {ACD, AB, BC} and D2 = {AB, BC, CD}. Is D1 and D2 a Lossless decomposition?