1. When a relation R(A, B, C) with FDs A→BC, B→C is decomposed into R1(A, B), A→B and R2(B, C), B→C, the functional dependency A→C is lost after the decomposition. 【B】

A. True. B. False

2. If a relation contains two attributes, then the highest normal form it certainly belongs to can be

【D】

A. 1NF B. 2NF

C. 3NF D. BCNF

3. If a relation has FDs（AB→CD, A→D），then the highest normal form it belongs to is: 【A】

A. 1NF B. 2NF

C. 3NF D. BCNF

4. Consider the relation with schema R(A,B,C,D,E,F) and the following functional dependencies (FDs): A→BC, D→AF

1. What are the candidate keys of this relation?

（D,E）

2. Is relation R in BCNF? If it is, explain why it is. If it is not, explain why not and give a decomposition of R into a collection of relations that are in BCNF.

No, because there are dependencies as D→A and A→B, which is transitive. And (D,E).

The relation should be decomposed into:

R1(D,A,F)(candidate keys(D))

R2(D,E)(candidate keys(D,E))

R3(A,B,C) (candidate keys(A))