1. What is a functional dependency ?

An FD is a set of two tuples (X and Y) that agree on all their respective attributes
X -> Y equivalent to t(X) = u(x) ⇔ t(y) = u(y)

2. What is a superkey ?

K is a superkey of relation R if K functionally determines all the attributes of R

3. What is a trivial functional dependency ?

x -> x is trivial xy -> y is also trivial

4. What is an inclusion dependency ?

We have an inclusion dependency when a subset of Y attributes is included in X attributes (ex : foreign key).

5. What is the inference test ?

If we have two rules A -> B and B -> C, and want to know whether A -> C, we run it with data and compare the results of A -> B ; B -> C with the results of A -> C.
If the results are equal, the inference test is true. If the values are unknown or different, the test is false.

6. Closure Test

We take an arbitrary starting node and apply functional dependencies available from the list of nodes already traveled. If one is available, we add the node to the list. If none is available, the closure test ends. The result is the list of nodes accessible from a starting node.

7. What are Armstrong Axioms ?
    a. Reflexivity : x -> x
    b. Augmentation : x -> y then xz -> yz
    c. Transitivity : x -> y and y -> z then x -> z

8. What are Extended Armstrong Axioms ?
    a. Union : X -> Y and X -> Z then X -> YZ
    b. Decomposition : X -> YZ then X-> Y and X -> Z
    c. Pseudo-transitivity : X -> Y and YZ -> T then XZ -> T