Interview Questions

Q 1.What are different types of Normalization Levels or Normalization Forms? (Goldman sachs)

The different types of Normalization Forms are:

- ❖ **First Normal Form:** Duplicate columns from the same table need to be eliminated. We have to create separate tables for each group of related data and identify each row with a unique column or set of columns (Primary Key)
- ❖ **Second Normal Form**: First it should meet the requirement of first normal form. Removes the subsets of data that apply to multiple rows of a table and place them in separate tables. Relationships must be created between the new tables and their predecessors through the use of foreign keys.
- ❖ **Third Normal Form:** First it should meet the requirements of the second normal form. Remove columns that are not depending upon the primary key.
- ❖ **Fourth Normal Form:** There should not be any multi-valued dependencies.

Q 2.What is Normalization? (TCS)

Please refer to the notes for definitions of the aforementioned operating systems under the heading "Normalization".

Q 3.What is Denormalization? (Amazon)

De-normalization is the process of optimizing the read performance of a database by adding redundant data or by grouping data. Denormalization is used in OLAP systems.

Q 4. What is BCNF? (Infosys)

Answer: BCNF is the Boyce Codd Normal form. It is the higher version of 3Nf which does not have any multiple overlapping candidate keys.

Q 5. What is a functional dependency in the DBMS?(Matercard)
This is basically a constraint which is useful in describing the relationship among the different attributes in a relation.

Example: If there is some relation 'R1' which has 2 attributes as Y and Z then the functional dependency among these 2 attributes can be shown as Y->Z which states that Z is functionally dependent on Y.

Q 6.What are the goals of normalization? (ADOBE)
It means decomposing (dividing/breaking down) a 'big' un-normalized table (file) into several smaller tables by:
- Eliminating insertion, update and delete anomalies.
- Establishing functional dependencies.
- Removing transitive dependencies.
- Reducing non-key data redundancy

Q 7.How do you convert normalization to an ER diagram? (Amazon)
Normalization utilizes association among attributes within an entity table to accomplish its objective. Since an ERD also utilizes association among attributes as a basis to identify entity type structure, it is possible to apply normalization principles during the conceptual data modeling phase.

Q 8.When is functional dependency said to be fully functional dependent? (L&T)
To fulfill the criteria of fully functional dependency, the relation must meet the requirement of functional dependency.
A functional dependency 'A' and 'B' are said to be fully functional dependent when removal of any attribute say 'X' from 'A' means the dependency does not hold anymore.

Q 9.Explain trivial functional dependency. (Siemens)
Please refer to the notes for definitions of the aforementioned operating systems under the heading "trivial functional dependency".

Q 10. Explain the transitive property.(Accenture)
Please refer to the notes for definitions of the aforementioned operating systems under the heading "Transitive property".