1. What is an object in SQL?

Is used to store or reference data.

1. What is Index? What are the advantages and disadvantages of using Indexes?

Is a physical structure contains pointers to the data.

Advantages: Speed up SELECT query; Helps to make a row unique or without duplicates(primary, unique) ; If index is set to fill-text index, then we can search against large string values.

Disadvantages: Indexes take additional disk space. Indexes slow down INSERT, UPDATE and DELETE, but will speed up UPDATE if the WHERE condition has an indexed field. INSERT, UPDATE and DELETE becomes slower because on each operation the indexes must also be updated.

1. What are the types of Indexes?

Clustered Index, Non-Clustered Index, Unique Index, Filtered Index, Columnstore Index, Hash Index.

1. Does SQL Server automatically create indexes when a table is created? If yes, under which constraints?

Yes. Depends on whether it is a primary key or a unique key.

1. Can a table have multiple clustered index? Why?

No, the data rows themselves can be stored in only one order.

1. Can an index be created on multiple columns? Is yes, is the order of columns matter?

Yes.

1. Can indexes be created on views?

Yes.

1. What is normalization? What are the steps (normal forms) to achieve normalization?

A process of organizing data to minimize redundancy (data duplication), which in turn ensures data consistency. Those steps are First Normal Form, Second Normal Form, Third Normal Form.

1. What is denormalization and under which scenarios can it be preferable?

Denormalization is used to combine multiple table data into one so that it can be queried quickly.

1. How do you achieve Data Integrity in SQL Server?

Using constraints.

1. What are the different kinds of constraint do SQL Server have?

NOT NULL, Unique, Primary key, Foreign key, Check Constraints.

1. What is the difference between Primary Key and Unique Key?

Primary key = unique key + not null

1. What is foreign key?

A column or combination of columns that is used to establish and enforce a link between the data in two tables.

1. Can a table have multiple foreign keys?

Yes.

1. Does a foreign key have to be unique? Can it be null?

No. But it can be null.

1. Can we create indexes on Table Variables or Temporary Tables?

Yes.

1. What is Transaction? What types of transaction levels are there in SQL Server?

A transaction is the logical work unit that performs a single activity or multiple activities in a database. Level: Read Uncommitted (Lowest level), Read Committed, Repeatable Read, Serializable (Highest Level), Snapshot Isolation