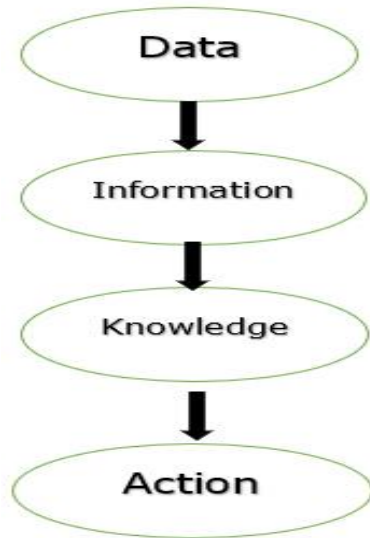13.   List the purpose of Database management systems.

The purpose of DBMS is to transform the following :

- Data into information.
- Information into knowledge.
- Knowledge to the action
  The below diagram shows the purpose of DBMS

```
   ┌─────────┐
   │  Data   │
   └────┬────┘
        ▼
 ┌─────────────┐
 │ Information │
 └──────┬──────┘
        ▼
  ┌───────────┐
  │ Knowledge │
  └─────┬─────┘
        ▼
   ┌─────────┐
   │ Action  │
   └─────────┘
```

14.   Outline the use of commit and rollback.

Commit:

The COMMIT statement lets a user save any changes or alterations on the current transaction. These changes then remain permanent.

Syntax: Commit;

Rollback:

The ROLLBACK statement lets a user undo all the alterations and changes that occurred on the current transaction after the last COMMIT.

Syntax: Rollback;

15.   List out the some of the major responsibilities of DBA.

- Software Installation and Maintenance
- Data Extraction, Transformation, and Loading

- Database Backup and Recovery
- Security
- Authentication
- Capacity Planning
- Performance Monitoring
- Database Tuning
- Troubleshooting

16.   Compare DCL and TCL Languages.

DCL	TCL
DCL is abbreviation of Data Control Language	TCL is abbreviation of Transactional Control Language.
It is used to create roles, permissions, and referential integrity as well it is used to control access to database by securing it	It Is used to manage different transactions occurring within a database.
Used in SQL (RDBMS)	Used in SQL (RDBMS)
Commands: REVOKE,GRANT	Commands: COMMIT, ROLLBACK, SAVEPOINT, SET TRANSACTION

17.   What are the major draw backs of File Processing System?

There are so many drawbacks in using the file system. These are mentioned below :

- Data redundancy and inconsistency: Different file formats, duplication of information in different files.
- Difficulty in accessing data: To carry out new task we need to write a new program.
- Data Isolation – Different files and formats.

- Integrity problems.
- Atomicity of updates – Failures leave the database in an inconsistent state.
- Concurrent access by multiple users.
- Security problems.

18.   Define the term Entity set and Relationship

Entity set:

An entity is a "thing" or "object" in the real world. An entity set is a set of entities of the same type that share the same properties attributes. The set of all persons who are customers at a given bank, for example be defined as the entity set customer.
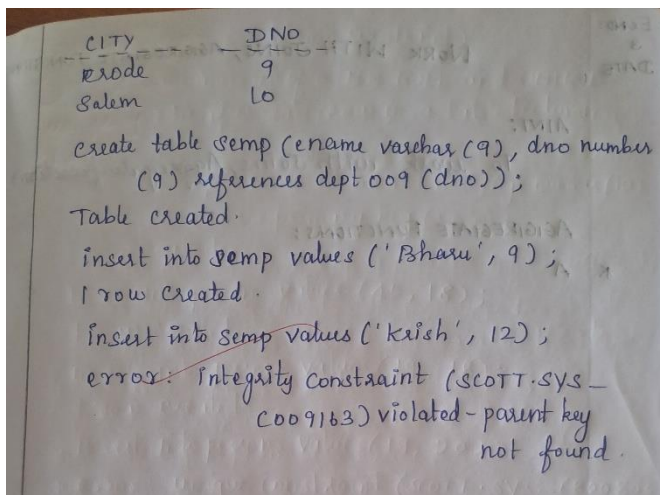
Relationship set:

A relationship is an association among several entities. A relationship set is a set of relationships of the same type. As another example, consider the two entity sets loan and branch. We define the relationship set loan-branch to denote the association between a bank loan and branch in which that loan is maintained.

19.   Outline the concept of Foreign keys with example

A foreign key is a column or columns of data in one table that refers to the unique data values – often the primary key data – in another table. Foreign keys link together two or more tables in a relational database.

Example:

20.   List out the example for one to one and one to many relationships.

- One to one: An entity in A is associated with at most one entity in B, a entity in B is associated with at most one entity in A.
- One to many : An entity in A is associated with any number (zero or m entities in B. An entity in B, however, can be associated with at most one in A.
- Example:

Figure 2.4   Mapping cardinalities. (a) One to one. (b) One to many.
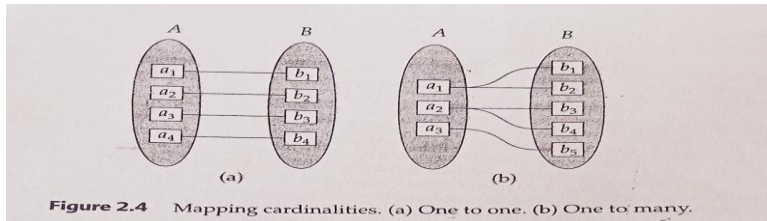
21.   Define Integrity constraints.

Integrity Constraints are the protocols that a table's data columns must follow. These are used to restrict the types of information that can be entered into a table. This means that the data in the database is accurate and reliable. You may apply integrity Constraints at the column or table level. The table-level Integrity constraints apply to the entire table, while the column level constraints are only applied to one column.

22.   List the extended E-R features available in Entity relationship diagram.

Extended E-R features :

- Specialization .
- Generalization.
- Attribute inheritance.
- Constraints on Generalization.
- Aggregation.
- Alternative E-R Notations

23.   Define Aggregate function.

Aggregate functions are functions that take a collection (a set or multiset) of values as input and return a single value. SQL offers five built-in aggregate functions:

- Average: avg
- Minimum: min
- Maximum: max
- Total: sum
- Count: count

24.   Summarize nested sub queries in SQL.

A nested query is a query that has another query embedded within it. The embedded query is called a subquery. A subquery typically appears within the WHERE clause of a query. It can sometimes appear in the FROM clause or HAVING clause.