***FINAL PROJECT***

1. Using which language can a user request information from a database? a) Query b) Relational c) Structural d) Compiler

**ANSWER – [C] STRUCTURAL**

1. Which one of the following is a procedural language? a) Domain relational calculus b) Tuple relational calculus c) Relational algebra d) Query language

**ANSWER- [C] RELATION ALGEBRA**

1. The\_\_\_\_\_ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple. a) Select b) Join c) Union d) Intersection

**ANSWER-[B] JOIN**

1. The \_\_\_\_\_\_\_operation performs a set union of two “similarly structured” tables a) Union b) Join c) Product d) Intersect

**ANSWER-[A] UNION**

1. The most commonly used operation in relational algebra for projecting a set of tuple from a relation is a) Join b) Projection c) Select d) Union

**ANSWER-[C] SELECT**

1. The most commonly used operation in relational algebra for projecting a set of tuple from a relation is a) Join b) Projection c) Select d) Union

**ANSWER-[C] SELECT**

1. A \_\_\_\_\_\_\_\_ is a pictorial depiction of the schema of a database that shows the relations in the database, their attributes, and primary keys and foreign keys. a) Schema diagram b) Relational algebra c) Database diagram d) Schema flow

**ANSWER- [A] SCHEMA DIAGRAM**

1. The \_\_\_\_\_\_\_\_\_ provides a set of operations that take one or more relations as input and return a relation as an output. a) Schematic representation b) Relational algebra c) Scheme diagram d) Relation flow

**ANSWER-[B] REALTION ALGEBRA**

Q9 Define database model ?

ANSWER- A database model is a type of data model that determines the logical structure of a database and fundamentally determines in which manner data can be stored, organized and manipulated. The most popular example of a database model is the relational model, which uses a table-based format.

There are many kinds of data models. Some of the most common ones include:

* Hierarchical database model
* Relational model
* Network model
* Object-oriented database model
* Entity-relationship model
* Document model
* Entity-attribute-value model
* Star schema

Q10 Define Normalization?

ANSWER-Normalization is the process of reorganizing data in a database so that it meets two basic requirements:

1. There is no redundancy of data, all data is stored in only one place.
2. Data dependencies are logical,all related data items are stored together.

Normalization is important for many reasons, but chiefly because it allows databases to take up as little disk space as possible, resulting in increased performance.

Normalization is also known as data normalization.

Q11 Enlist the advantages of normalizing database?

ANSWER-**Benefits of Normalization**

* Greater overall database organization.
* Reduction of redundant data.
* Data consistency within the database.
* A much more flexible database design.
* A better handle on database security.

Q12 Define Denormalization?

ANSWER-Denormalization is a strategy that database managers use to increase the performance of a database infrastructure. It involves adding redundant data to a normalized database to reduce certain types of problems with database queries that combine data from various tables into a single table. The definition of denormalization is dependent on the definition of normalization, which is defined as the process of organizing a database into tables correctly to promote a given use.

Q13 Define Data Warehousing ?

## ANSWER-A Data Warehousing (DW) is process for collecting and managing data from varied sources to provide meaningful business insights. A Data warehouse is typically used to connect and analyze business data from heterogeneous sources. The data warehouse is the core of the BI system which is built for data analysis and reporting.

It is a blend of technologies and components which aids the strategic use of data. It is electronic storage of a large amount of information by a business which is designed for query and analysis instead of transaction processing. It is a process of transforming data into information and making it available to users in a timely manner to make a difference.

Q14 What do you mean by Index hunting?

ANSWER-Indexes help in improving the speed as well as the query performance of database. The procedure of boosting the collection of indexes is named as Index hunting.  
  
Index hunting helps in improving the speed as well as the query performance of database. The followed measures are achieved to do that:  
1. The query optimizer is used to coordinate the study of queries with the workload and the best use of queries suggested based on this.  
2. Index, query distribution along with their performance is observed to check the effect.  
3. Tuning databases to a small collection of problem queries is also recommended.

Q15 Enlist the disadvantages of query.

* No indexes.
* Stored procedures are excessively compiled.
* Triggers and procedures are without SET NOCOUNT ON.
* Complicated joins making up inadequately written **query**.
* Cursors and temporary tables showcase a bad presentation.

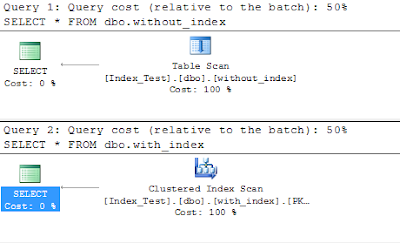
Q16Enlist ways to efficiently code transactions

ANSWER- **Ways to efficiently code transactions:**

1. User input should not be allowed while transactions.
2. While browsing, transactions must not be opened of data.
3. Transactions must be kept as small as possible.
4. Lower transaction segregation levels.
5. Least information of data must be accessed while transacting.

Q17 Differentiate Table Scan from Index Scan ?

ANSWER-A table scan is performed on a table which does not have an Index upon it (a heap) – it looks at the rows in the table and an Index Scan is performed on an indexed table – the index itself



Q18 Define Fragmentation?

ANSWER-Fragmentation is a database server feature that allows you to control where data is stored at the table level. Fragmentation enables you to define groups of rows or index keys within a table according to some algorithm or scheme . ... You can use this table to access information about your fragmented tables and indexes.Fragmentation is a database server feature that allows you to control where data is stored at the table level. Fragmentation enables you to define groups of rows or index keys within a table according to some algorithm or scheme. You can store each group or fragment (also referred to as a partition) in a separate dbspace associated with a specific physical disk. You use SQL statements to create the fragments and assign them to dbspaces.

Q19Differentiate Nested Loop, Hash Join and Merge Join ?

* **Hash joins**- In a *hash* join, the Oracle database does a full-scan of the driving table, builds a RAM hash table, and then probes for matching rows in the other table.  For certain types of SQL, the hash join will execute faster than a nested loop join, but the *hash* join uses more RAM resources.
* **Nested loops join** - The *nested loops* table join is one of the original table join plans and it remains the most common.  In a *nested loops* join, we have two tables a driving table and a secondary table.  The rows are usually accessed from a driving table *index range scan*, and the driving table result set is then nested within a probe of the second table, normally using an *index range scan* method.

**Merge join** is used when projections of the joined tables are sorted on the join columns. Merge joins are faster and uses less memory than hash joins.

Q20What is Database partitioning?

ANSWER-Partitioning is the database process where very large tables are divided into multiple smaller parts. By splitting a large table into smaller, individual tables, queries that access only a fraction of the data can run faster because there is less data to scan. The main of goal of partitioning is to aid in maintenance of large tables and to reduce the overall response time to read and load data for particular SQL operations.

