

## Final-Project

Q1. Using which language can a user request information from a database? a) Query b) Relational c) Structural d) Compiler

Ans . Query

Q2. Which one of the following is a procedural language? a) Domain relational calculus b) Tuple relational calculus c) Relational algebra d) Query language

Ans . Relational Algebra

Q3. 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

Ans . Join

Q4. The \_\_\_\_\_operation performs a set union of two “similarly structured” tables a) Union b) Join c) Product d) Intersect

Ans . Union

Q5. 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

Ans . Select

Q6. 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

Ans . Select

Q7. 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

Ans . None

Q8. 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

Ans. Relational Algebra

Q9. Define database model

Ans. 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.

Q10. Define Normalization.

Ans. It is a process used to organize a database into tables and columns. The main idea with this is that a table should be about a *specific* topic and only supporting topics included. Take a spreadsheet containing the information as an example, where the data contains salespeople and customers serving several purposes:

Q11. Enlist the advantages of normalizing database.

Ans. 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.

Ans. Denormalization is a database optimization technique in which we add redundant data to one or more tables. This can help us avoid costly joins in a relational database. ... In a traditional normalized database, we store data in separate logical tables and attempt to minimize redundant data.

Q13. Define Data Warehousing.

Ans. 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.

Q14. What do you mean by Index hunting?

Ans. Index hunting is the process of boosting the collection of indexes which help in improving the query performance as well as the speed of the database.

Q15. Enlist the disadvantages of query.

Ans. The disadvantages of query are:

- 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.

Q16. Enlist ways to efficiently code transactions.

Ans. 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.

Ans. 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.

Ans. 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.

Q19. Differentiate Nested Loop, Hash Join and Merge Join.

Ans. The major difference between a hash join and a nested loops join is the use of a full-table scan with the hash join. We may see the physical join implementations with names like nested loops, sort merge and hash join.

Q20. What is Database partitioning?

Ans. 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.