IMAYAM ARTS AND SCIENCE COLLEGE

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Department Of Computer Science & Applications

DATABASE SYSTEMS (THEORY)

(16SCCCA4 / 16SCCCS4)

QUESTION BANK

SUBJECT HANDLED BY:

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Answer the following questions (2 marks)

UNIT - I

1. **What is database?**
   - A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).
   - Databases support storage and manipulation of data. You can organize data into tables, rows, columns, and index it to make it easier to find relevant information. There are many databases available like MySQL, Sybase, Oracle, MongoDB, SQL Server, etc.
2. **What is meant by system application in database?**
   - Database applications are software programs designed to collect, manage information efficiently.
   - Database Management System (DBMS) is software for storing and retrieving users' data while considering security measures. It provides an interface between the data and the software application.
3. **Write the purpose of Database?**

   Database systems are designed to manage large numbers of information. Management of data involves both defining structures for storage of information and providing mechanisms for the manipulation of information. If data are to be shared among several users, the system must avoid possible anomalous results. To avoid,
   - **Data redundancy and inconsistency**
   - **Data isolation**
   - **Security problems**
4. **What is Data Abstraction and its Level?**

   Database systems are made-up of complex data structures. To ease the user interaction with database, the developers hide internal irrelevant details from users. This process of hiding irrelevant details from user is called data abstraction.

5. **What is Instance?**

The data stored in database at a particular moment of time is called instance of database. Database schema defines the variable declarations in tables that belong to a particular database; the value of these variables at a moment of time is called the instance of that database.

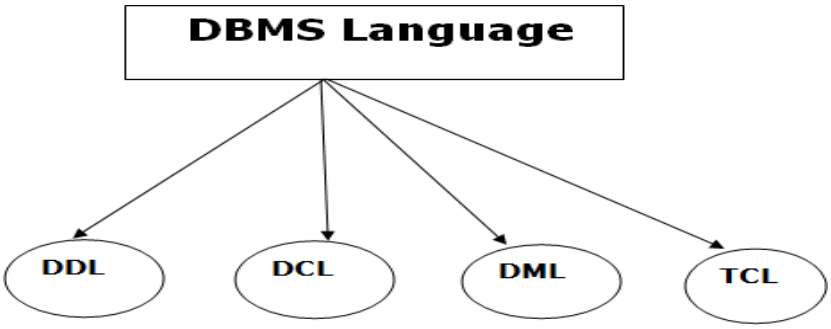
6. **What is Schema?**

Design of a database is called the schema. Schema is of three types: Physical schema, logical schema and view schema.

- **Physical level**
- **Logical level**
- **View level**

7. **What is database language and its type?**

A DBMS has appropriate languages and interfaces to express database queries and updates. Database languages can be used to read, store and update the data in the database.



8. **What is DDL?**

DDL stands for **D**ata **D**efinition **L**anguage. It is used to define database structure or pattern. It is used to create schema, tables, indexes, constraints, etc. in the database. Using the DDL statements, you can create the skeleton of the database. Data definition language is used to store the information of metadata like the number of tables and schemas, their names, indexes, columns in each table, constraints, etc.

9. **What is DCL?**

DCL stands for **D**ata **C**ontrol **L**anguage. It is used to retrieve the stored or saved data. The DCL execution is transactional. It also has rollback parameters.

10. What is DML?

DML stands for **D**ata **M**anipulation **L**anguage. It is used for accessing and manipulating data in a database. It handles user requests.

11. What is TCL?

TCL is used to run the changes made by the DML statement. TCL can be grouped into a logical transaction.

12. What is database Design?

It is a collection of processes that facilitate the designing, development, implementation and maintenance of enterprise data management systems. Properly designed database are easy to maintain, improves data consistency and are cost effective in terms of disk storage space. The database designer decides how the data elements correlate and what data must be stored.

13. What is object-based database?

Object- Based is a database in which the information is represented in form of object as used in object-oriented programming. It is different from rational database. This type of database is used when there is complex data or/and multiple data relationships. It have a many-to-many object relationship. It should not be used when there are few join tables and there are large volume of simple transaction data.

14. What is semi-structured database?

It is the data are in the form of structured data that does not conform with the formal structure of data models associated with rational databases or other form of data. Therefore, it is also known as self-describing structure.

Types of Semi-Structured Database:

- XML semi-structured database
- JSON (JavaScript Object Notation)semi-structured database.

15. What is data mining?

"Mining" is the process of extraction of some valuable material from the earth e.g. coal mining, diamond mining etc. In the context of computer science, **"Data Mining"** refers to the extraction of useful information from a bulk of data or data warehouses. Data Mining can be applied to any type of data e.g. Data Warehouses, Transactional Databases, Relational Databases, Multimedia Databases, Spatial Databases, Time-series Databases, World Wide Web

16. What is database Architecture?

Database architecture uses programming languages to design a particular type of software for businesses or organizations. Database architecture focuses on the design, development, implementation and maintenance of computer programs that store and organize information for businesses, agencies and institutions. A database architect develops and implements software to meet the needs of users. The architecture of a DBMS can be seen as either single tier or multi-tier.

1. 1-tier architecture
2. 2-tier architecture
3. 3-tier architecture
4. n-tier architecture

17. What is database user and administrators?

Database users are the one who really use and take the benefits of database. There will be different types of users depending on their need and way of accessing the database. The life cycle of database starts from designing, implementing to **administration** of it. A database for any kind of requirement needs to be designed perfectly so that it should work without any issues. Once all the design is complete, it needs to be installed. Once this step is complete, users start using the database.

UNIT - II

18. What is relational Model?

The relational model represents the database as a collection of relations. Relational Model represents how data is stored in Relational Databases. In relational model, the data and relationships are represented by collection of inter-related tables. Each table is a group of column and rows, where column represents attribute of an entity and rows represents records.

19. What is meant by structure of relational database?

A relational database consists of a collection of tables, each having a unique name. A row in a table represents a relationship among a set of values. Thus a table represents a collection of relationships. There is a direct correspondence between the concept of a table and the mathematical concept of a relation. A substantial theory has been developed for relational databases.

20. What is algebra operations and its types?

Relational algebra is a procedural query language, which takes instances of relations as input and yields instances of relations as output. It uses operators to perform queries. An operator can be either **unary** or **binary**. They accept relations as their input and yield relations as their output. The fundamental operations of relational algebra are as follows.

- ✓ Select
- ✓ Project
- ✓ Union
- ✓ Set different
- ✓ Cartesian product
- ✓ Rename

21. What is extended operations?

In Relational Algebra, **Extended Operators** are those operators that are derived from the basic operators. We already have discussed Basic Operators in the previous section. Now let us discuss the **Extended Operators** and how they are beneficial in Relational Algebra. There are mainly three **types of Extended Operators**, namely:

1. Intersection
2. Divide
3. Join

22. What is intersection?

Intersection works on the relation as 'this and that'. In relational algebra, A ∩ B returns a relation instance that contains every tuple that occurs in relation to instance A and relation instance B (both together). Here, A and B need to be union-compatible, and the schema of both result and A must be identical.

23. What is divide?

Divide operator is used for the queries that contain the keyword ALL. For e.g. – Find all the students who has chosen additional subjects Machine Learning and Data Mining.

24. What is Join?

Join operation is as its name suggest, to join or combine two or more relations' information. Join can also be defined as a cross-product followed by selection and projection. There are several varieties of Join operation. Let's discuss all of them one by one.

25. Define NULL VALUE

The SQL **NULL** is the term used to represent a missing value. A NULL value in a table is a value in a field that appears to be blank. A field with a NULL value is a field with no value. It is very important to understand that a NULL value is different than a zero value or a field that contains spaces.

26. What is modification of database?

Using SQL commands provides automatic support for maintaining the integrity of the data. An SQL command is an atomic (all or nothing) operation. If there are indices defined on the table, SQL will automatically update them to reflect the changes. If there are any data or referential integrity constraints defined, SQL will automatically enforce them. If there are any defined triggers, performing these actions will pull the corresponding trigger.

27. What are the queries used to modify database?

The INSERT statement inserts a new record into an SQL table. You can insert a single record or multiple records. The UPDATE statement modifies values in one or more existing records within an SQL table. The DELETE statement removes one or more existing records from an SQL table.

UNIT – III

28. What is SQL?

SQL stands for Structured Query Language. SQL is used to communicate with a database. SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database. It is a computer language for storing, manipulating and retrieving data stored

in a relational database. All the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL Server use SQL as their standard database language.

29. What is data definition in SQL?

Data definition language (DDL) refers to the set of SQL commands that can create and manipulate the structures of a database. DDL statements are used to create, change, and remove objects including indexes, triggers, tables, and views. Common DDL statements include:

- CREATE (generates a new table)
- ALTER (alters table)
- DROP (removes a table from the database)

30. What is the basic structure in SQL queries?

The basic structure of an SQL query consists of three clauses: select, from, and where. The query takes as its input the relations listed in the from clause, operates on them as specified in the where and select clauses, and then produces a relation as the result.

31. What is SET operator?

SQL supports few Set operations which can be performed on the table data. The set operators are availed to combine information of similar type from one or more than one table. The set operators look similar to SQL joins although there is a big difference. SQL joins tends to combine columns from different tables, whereas SQL set operators combine rows from distinct queries. There are distinct types of set operators in SQL. Set Operator in SQL are same as of DBMS.

- **Union**
- **Union all**
- **Intersect**
- **Minus**

32. What is nested sub-queries?

A subquery, also known as a nested query or subselect, is a SELECT query embedded within the WHERE or HAVING clause of another SQL query. Subqueries provide an easy and efficient way to handle the queries that depend on the results from another query. They are almost identical to the normal SELECT statements, but there are few restrictions.

33. What is meant by complex queries?

Complex SQL is the use of SQL queries which go beyond the standard SQL of using the SELECT and WHERE commands. Complex SQL often involves using complex joins and sub-queries, where queries are nested in WHERE clauses. Complex queries frequently involve heavy use of AND and OR clauses. These queries make it possible for perform more accurate searches of a database.

34. What are the views in SQL?

Views in SQL are kind of virtual tables. A view also has rows and columns as they are in a real table in the database. We can create a view by selecting fields from one or more tables present in the database. A View can either have all the rows of a table or specific rows based on certain condition.

35. What is join relation in SQL?

The SQL **Joins** clause is used to combine records from two or more tables in a database. A JOIN is a means for combining fields from two tables by using values common to each. There are 4 types in joins. They are,

- **Inner Join**
- **Left (Outer) Join**
- **Right (Outer) Join**
- **Full (Outer) Join**

36. What are the datatypes in SQL?

SQL data types can be broadly divided into following categories.

- **Numeric data types** such as int, tinyint, bigint, float, real etc.
- **Date and Time data types** such as Date, Time, Datetime etc.
- **Character and String data** types such as char, varchar, text etc.
- **Unicode character string data types**, for example nchar, nvarchar, ntext etc.
- **Binary data types** such as binary, varbinary etc.
- **Miscellaneous data types** – clob, blob, xml, cursor, table etc.

37. What is meant by schemas in SQL?

A Schema in SQL is a collection of database objects associated with a database. The username of a database is called a Schema owner (owner of logically grouped structures of data). Schema always belong to a single database whereas a database can have single or multiple schemas. Also, it is also very similar to separate namespaces or containers, which stores database objects. It includes various database objects including your tables, views, procedures, index, etc.

38. What is meant by constraints in SQL & types?

Constraints are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the table. If there is any violation between the constraint and the data action, the action is aborted. Constraints can be column level or table level. Column level constraints apply to a column, and table level constraints apply to the whole table.

39. What are the types in constraints in SQL?

- **NOT NULL** - Ensures that a column cannot have a NULL value
- **UNIQUE** - Ensures that all values in a column are different
- **PRIMARY KEY** - A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table
- **FOREIGN KEY** - Uniquely identifies a row/record in another table
- **CHECK** - Ensures that all values in a column satisfies a specific condition
- **DEFAULT** - Sets a default value for a column when no value is specified
- **INDEX** - Used to create and retrieve data from the database very quickly.

40. What are integrity constraints?

- Integrity constraints are a set of rules. It is used to maintain the quality of information.
- Integrity constraints ensure that the data insertion, updating, and other processes have to be performed in such a way that data integrity is not affected.
- Thus, integrity constraint is used to guard against accidental damage to the database.

41. What is embedded SQL?

This is a method for combining data manipulation capabilities of SQL and computing power of any programming language. Then embedded statements are in line with the program source code of the host language. The code of embedded SQL is parsed by a preprocessor which is

also embedded and is replaced by the host language called for the code library it is then compiled via the compiler of the host.

42. What is inner join?

An inner join focuses on the commonality between two tables. When using an inner join, there must be at least some matching data between two (or more) tables that are being compared. An inner join searches tables for matching or overlapping data. Upon finding it, the inner join combines and returns the information into one new table.

43. What is outer join?

An outer join returns a set of records (or rows) that include what an inner join would return but also includes other rows for which no corresponding match is found in the other table.

There are three types of outer joins:

- Left Outer Join (or Left Join)
- Right Outer Join (or Right Join)
- Full Outer Join (or Full Join)

44. What is a aggregation function & types?

In database management an aggregate function is a function where the values of multiple rows are grouped together as input on certain criteria to form a single value of more significant meaning.

- **Count()**
- **Sum()**
- **Avg()**
- **Min()**
- **Max()**

UNIT – IV

45. What is relational language?

Relational query languages use relational algebra to break the user requests and instruct the DBMS to execute the requests. It is the language by which user communicates with the database. These relational query languages can be procedural or non-procedural.

46. What is meant by relational calculus & its type?

Relational calculus is a non procedural query language. It uses mathematical predicate calculus instead of algebra. It provides the description about the query to get the result where

as relational algebra gives the method to get the result. The relational calculus is not the same as that of differential and integral calculus in mathematics but takes its name from a branch of symbolic logic termed as predicate calculus.

47. What is tuple relational calculus?

The tuple relational calculus is specified to select the tuples in a relation. In TRC, filtering variable uses the tuples of a relation.

The result of the relation can have one or more tuples.

Notation

{T | P (T)} or {T | Condition (T)}

Where
T is the resulting tuples
P(T) is the condition used to fetch T.

Example

{ T.name | Author(T) AND T.article = 'database' }

OUTPUT: This query selects the tuples from the AUTHOR relation. It returns a tuple with 'name' from Author who has written an article on 'database'.
TRC (tuple relation calculus) can be quantified. In TRC, we can use Existential (∃) and Universal Quantifiers (∀).

48. What is domain relational calculus?

The second form of relation is known as Domain relational calculus. In domain relational calculus, filtering variable uses the domain of attributes.

Domain relational calculus uses the same operators as tuple calculus. It uses logical connectives ∧ (and), ∨ (or) and ¬ (not).

It uses Existential (∃) and Universal Quantifiers (∀) to bind the variable.

Notation

{ a1, a2, a3, ..., an | P (a1, a2, a3, ... ,an)}

Where

a1, a2 are attributes

P stands for formula built by inner attributes

Output: This query will yield the article, page, and subject from the relational javatpoint, where the subject is a database.

49. What is E-R Model?

ENTITY RELATIONAL (ER) MODEL is a high-level conceptual data model diagram. ER modeling helps you to analyze data requirements systematically to produce a well-designed database. The Entity-Relation model represents real-world entities and the relationship between them. It is considered a best practice to complete ER modeling before implementing your database.

50. What is constraints in relational layer?

While designing Relational Model, we define some conditions which must hold for data present in database are called Constraints. These constraints are checked before performing any operation (insertion, deletion and updation) in database. If there is a violation in any of constrains, operation will fail. There are 3 types of constraints.

- **Domain Constraints**
- **Key Integrity**
- **Referential Integrity**

51. What is domain constraints?

These are attribute level constraints. An attribute can only take values which lie inside the domain range. e.g,; If a constrains AGE>0 is applied on STUDENT relation, inserting negative value of AGE will result in failure.

52. What is key integrity?

Every relation in the database should have atleast one set of attributes which defines a tuple uniquely. Those set of attributes is called key. e.g.; ROLL_NO in STUDENT is a key. No two students can have same roll number. So a key has two properties:

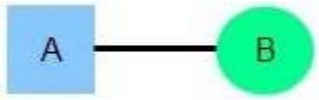
- It should be unique for all tuples.
- It can't have NULL values.

53. What is Referential Integrity

When one attribute of a relation can only take values from other attribute of same relation or any other relation, it is called referential integrity. Let us suppose we have 2 relations

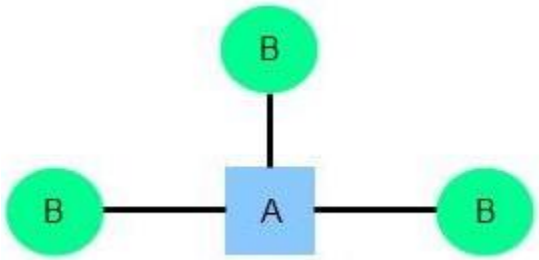
54. What is one-to-one entities?

One instance of an entity (A) is associated with one other instance of another entity (B). For example, in a database of employees, each employee name (A) is associated with only one social security number (B).



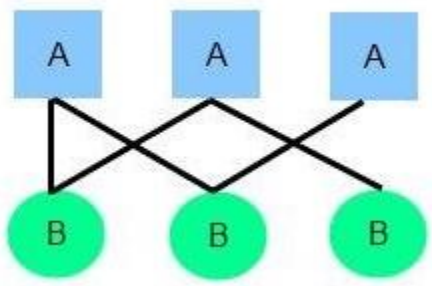
55. What is one-to-many entities?

One instance of an entity (A) is associated with zero, one or many instances of another entity (B), but for one instance of entity B there is only one instance of entity A. For example, for a company with all employees working in one building, the building name (A) is associated with many different employees (B), but those employees all share the same singular association with entity A.



56. What is many-to-many entities?

One instance of an entity (A) is associated with one, zero or many instances of another entity (B), and one instance of entity B is associated with one, zero or many instances of entity A. For example, for a company in which all of its employees work on multiple projects, each instance of an employee (A) is associated with many instances of a project (B), and at the same time, each instance of a project (B) has multiple employees (A) associated with it.



57. What is weak entity set?

An entity type should have a key attribute which uniquely identifies each entity in the entity set, but there exists some entity type for which key attribute can't be defined. These are called Weak Entity type. As the weak entities do not have any primary key, they cannot be identified on their own, so they depend on some other entity (known as owner entity).. Weak entity types have partial keys. Partial Keys are set of attributes with the help of which the tuples of the weak entities can be distinguished and identified.

58. What is primary key?

A primary key is a field in a table which uniquely identifies each row/record in a database table. Primary keys must contain unique values. A primary key column cannot have NULL values.

A table can have only one primary key, which may consist of single or multiple fields. When multiple fields are used as a primary key, they are called a composite key.

59. What is Foreign Key?

Foreign Key is a field in a database table that is Primary key in another table. It can accept multiple null, duplicate values. Example: We can have a DeptID column in the Employee table which is pointing to a DeptID column in a department table where it a primary key.

UNIT –V

60. What is atomic domains?

A *domain* is the original sets of atomic values used to model data. By *atomic value*, we mean that each value in the domain is indivisible as far as the relational model is concerned.

61. What is normal form & types?

Normalization is the process of minimizing **redundancy** from a relation or set of relations. Redundancy in relation may cause insertion, deletion and updation anomalies. So, it helps to minimize the redundancy in relations. **Normal forms** are used to eliminate or reduce redundancy in database tables.

- **First Normal Form**
- **Second Normal Form**
- **Third Normal Form**
- **Boyce-Codd Normal Form (BCNF)**

62. What is decomposition using functional dependencies?

Functional Dependency (FD) determines the relation of one attribute to another attribute in a database management system (DBMS) system. Functional dependency helps you to maintain the quality of data in the database. A functional dependency is denoted by an arrow →. The functional dependency of X on Y is represented by X → Y. Functional Dependency plays a vital role to find the difference between good and bad database design.

63. What is decomposition using multivalued dependencies?

Multivalued dependency occurs in the situation where there are multiple independent multivalued attributes in a single table. A multivalued dependency is a complete constraint between two sets of attributes in a relation. It requires that certain tuples be present in a relation.

64. What are the types of Functional Dependencies?

- Multivalued dependency:
- Trivial functional dependency**:**
- Non-trivial functional dependency**:**
- Transitive dependency:

FIVE MARK QUESTIONS

UNIT - I

1. **Explain types of database language and its type?**
2. **Explain object based and semi structure database?**
3. **Explain Database System Applications with example?**
4. **Explain the purpose of database?**
5. **Explain about database storage and querying transaction?**

UNIT - II

6. **Explain the structure of relational database?**
7. **Explain about Null values with example?**
8. **Explain extended relational algebra operations?**

UNIT - III

9. **Explain about basic structure of sql queries?**
10. **Explain about SQL aggregate functions with example?**
11. **Explain types of joins in sql with example?**
12. **Explain datatypes and schemas?**
13. **Explain integrity constraints?**
14. **Explain about embedded SQL?**

UNIT - IV

15. **Explain about relational calculus and its types?**
16. **Explain about E-R design issues?**
17. **Explain overview of design process?**

UNIT - V

18. **Explain atomic domains and first normal form?**
19. **Explain Decomposition Using Functional Dependencies?**
20. **Explain Decomposition Using multivalued Dependencies?**
21. **Explain Functional-Dependency Theory?**

TEN MARK QUESTIONS

UNIT - I

1. **Explain briefly about views of data?**
2. **Explain about database architecture?**
3. **Briefly explain about datamining and analysis?**

UNIT -II

4. **Explain about relational algebra?**
5. **Explain about the modification of database?**

UNIT - III

6. **Explain about set operation in SQL?**
7. **Briefly elaborate about aggregate function in SQL?**

UNIT - IV

8. **Briefly explain about ER-Model?**
9. **Briefly explain about constraints?**

UNIT - V

10. **Elaborate about normalization?**
11. **Briefly explain about database design process?**

CHOOSE THE CORRECT ANSWER(1 MARK)

1. **A relational database consists of a collection of**
    a) **Tables**
    b) **Fields**
    c) **Records**
    d) **Keys**

    Answer: a

2. **A_____in a table represents a relationship among a set of values.**
    a) **Column**
    b) **Key**
    c) **Row**
    d) **Entry**

    Answer: c

3. **The term_____is used to refer to a row.**
    a) **Attribute**
    b) **Tuple**
    c) **Field**
    d) **Instance**

    Answer: b

4. **The term attribute refers to a_____of a table.**
    a) **Record**
    b) **Column**
    c) **Tuple**
    d) **Key**

    Answer: b

5. **A domain is atomic if elements of the domain are considered to be _____ units.**
    a) **Different**
    b) **Indivisbile**
    c) **Constant**
    d) **Divisible**

    Answer: b

6. **The tuples of the relations can be of_____order.**
    a) **Any**
    b) **Same**
    c) **Sorted**
    d) **Constant**

    Answer: a

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

    Answer: a

8. **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

9. **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

10. **The_____operation performs a set union of two "similarly structured" tables**
    a) **Union**
    b) **Join**
    c) **Product**
    d) **Intersect**

    Answer: a

11. **The_____operator takes the results of two queries and returns only rows that appear in both result sets.**
    a) **Union**
    b) **Intersect**
    c) **Difference**
    d) **Projection**

    Answer: b

12. **SELECT * FROM employee WHERE dept_name="Comp Sci"**
    In the SQL given above there is an error . Identify the error.
    a) **Dept_name**
    b) **Employee**
    c) **"Comp Sci"**
    d) **From**

    Answer: c

13. **Which one of the following is used to define the structure of the relation, deleting relations and relating schemas?**

a) **DML(Data Manipulation Langauge)**
b) **DDL(Data Definition Langauge)**
c) **Query**
d) **Relational Schema**

Answer: b

14. The union operation is represented by

a) **n**
b) **U**
c) **–**
d) *****

Answer: b

15. The intersection operator is used to get the_____tuples.

a) **Different**
b) **Common**
c) **All**
d) **Repeating**

Answer: b

16. The union operation automatically_____unlike the select clause.

a) **Adds tuples**
b) **Eliminates unique tuples**
c) **Adds common tuples**
d) **Eliminates duplicate**

Answer: d

17. If we want to retain all duplicates, we must write_____in place of union.

a) **Union all**
b) **Union some**
c) **Intersect all**

d) **Intersect some**

Answer: a

18. **_____joins are SQL server default**

a) **Outer**

b) **Inner**

c) **Equi**

d) **None of the mentioned**

Answer: b

19. **Which of the following creates a virtual relation for storing the query?**

a) **Function**

b) **View**

c) **Procedure**

d) **None of the mentioned**

Answer: b

20. **_____ express the number of entities to which another entity can be associated via a relationship set.**

a) **Mapping Cardinality**

b) **Relational Cardinality**

c) **Participation Constraints**

d) **None of the mentioned**

Answer: a

21. **An entity in A is associated with at most one entity in B, and an entity in B is associated with at most one entity in A.This is called as**

a) **One-to-many**

b) **One-to-one**

c) **Many-to-many**

d) **Many-to-one**

Answer: b

22. An entity in A is associated with at most one entity in B. An entity in B, however, can be associated with any number (zero or more) of entities in A.

a) One-to-many

b) One-to-one

c) Many-to-many

d) Many-to-one

Answer: d

23. Data integrity constraints are used to:

a) Control who is allowed access to the data

b) Ensure that duplicate records are not entered into the table

c) Improve the quality of data entered for a specific property

d) Prevent users from changing the values stored in the table

Answer: c

24. _____is a special type of integrity constraint that relates two relations & maintains consistency across the relations.

a) Entity Integrity Constraints

b) Referential Integrity Constraints

c) Domain Integrity Constraints

d) Domain Constraints

Answer: b

25. In the_____normal form, a composite attribute is converted to individual attributes.

a) First

b) Second

c) Third

d) Fourth

Answer: a

26. A table on the many side of a one to many or many to many relationship must:

a) Be in Second Normal Form (2NF)

b) Be in Third Normal Form (3NF)

c) Have a single attribute key

d) Have a composite key

Answer: d

27. Functional Dependencies are the types of constraints that are based on_____

a) Key

b) Key revisited

c) Superset key

d) None of the mentioned

Answer: a

28. Which forms simplifies and ensures that there are minimal data aggregates and repetitive groups:

a) 1NF

b) 2NF

c) 3NF

d) All of the mentioned

Answer: c

29. Which forms has a relation that possesses data about an individual entity:

a) 2NF

b) 3NF

c) 4NF

d) 5NF

Answer: c

30. The database administrator who authorizes all the new users, modifies the database and takes grants privilege is

a) Super user

b) Administrator

c) Operator of operating system

d) All of the mentioned

Answer: d

31. A Delete command operates on_____relation.

a) One

b) Two

c) Several

d) Null

Answer: a

32. _____ are useful in SQL update statements, where they can be used in the set clause.

a) Multiple queries

b) Sub queries

c) Update

d) Scalar subqueries

Answer: d

33. The problem of ordering the update in multiple updates is avoided using

a) Set

b) Where

c) Case

d) When

Answer: c

34. Triggers are supported in

a) Delete

b) Update

c) Views

d) All of the mentioned

Answer: c

35. A_____is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updation of data.

a) Procedures

b) Triggers

c) Functions

d) None of the mentioned

Answer: b

36. The default extension for an Oracle SQL*Plus file is:

a) .txt

b) .pls

c) .ora

d) .sql

Answer: d

37. Foreign key is the one in which the_____of one relation is referenced in another relation.

a) Foreign key

b) Primary key

c) References

d) Check constraint

Answer: b

38. Domain constraints, functional dependency and referential integrity are special forms of _

a) Foreign key

b) Primary key

c) Assertion

d) Referential constraint

Answer: c

39. Data integrity constraints are used to:

a) Control who is allowed access to the data

b) Ensure that duplicate records are not entered into the table

c) Improve the quality of data entered for a specific property (i.e., table column)

d) Prevent users from changing the values stored in the table

Answer: c

40. Aggregate functions are functions that take a_____as input and return a single value.

a) Collection of values

b) Single value

c) Aggregate value

d) Both Collection of values & Single value

Answer: a

41. All aggregate functions except_____ignore null values in their input collection.

a) Count(attribute)

b) Count(*)

c) Avg

d) Sum

Answer: b

42. Which of the following is not an aggregate function?

a) Avg

b) Sum

c) With

d) Min

Answer: c