DATABASE MANAGEMENT SYSTEM PRACTICAL SAMPLE VIVA QUESTIONS AND ANSWERS

NOTE: VIVA QUESTIONS ARE NOT RESTRICTED TO THIS DOCUMENT. THESE ARE SAMPLE QUESTIONS

1) Define Database.

A prearranged collection of figures known as data is called database.

2) What is DBMS?

Database Management Systems (DBMS) are applications designed especially which enable user interaction with other applications.

3) Who proposed the relational model?

Edgar F. Codd proposed the relational model in 1970.

4) Define database model.

A data model determining fundamentally how data can be stored, manipulated and organised and the structure of the database logically is called database model.

5) What is SQL?

Structured Query Language (SQL) being ANSI standard language updates database and commands for accessing.

6) Enlist the various relationships of database.

The various relationships of database are:

- One-to-one: Single table having drawn relationship with another table having similar kind of columns.
- One-to-many: Two tables having primary and foreign key relation.
- Many-to-many: Junction table having many tables related to many tables.

7) Define Normalization.

Organized data void of inconsistent dependency and redundancy within a database is called normalization.

8) Enlist the advantages of normalizing database.

Advantages of normalizing database are:

- No duplicate entries
- Saves storage space
- Boasts the query performances.

9) Define DDL and DML.

Managing properties and attributes of database is called Data Definition Language(DDL). Manipulating data in a database such as inserting, updating, deleting is defined as Data Manipulation Language. (DML)

10) Enlist some commands of DDL.

They are:

CREATE: Create is used in the CREATE TABLE statement.

Syntax is: CREATE TABLE [column name] ([column definitions]) [table parameters]

ALTER: It helps in modification of an existing object of database.

Its syntax is: ALTER objecttype objectname parameters.

DROP: It destroys an existing database, index, table or view.

Its syntax is: DROP objecttype objectname.

11) Define Union All operator and Union.

Full recordings of two tables is Union All operator. A distinct recording of two tables is Union.

12) Why is group-clause used?

Group-clause uses aggregate values to be derived by collecting similar data.

13) Define Aggregate functions.

Functions which operate against a collection of values and returning single value is called aggregate functions Example: sum, count, max, min

14) Define Join and enlist its types.

Joins help in explaining the relation between different tables. They also enable you to select data with relation to data in another table. The various types are:

- INNER JOINs: Blank rows are left in the middle while more than equal to two tables are joined.

- OUTER JOINs: Divided into Left Outer Join and Right Outer Join. Blank rows are left at the specified side by joining tables in other side.

Other joins are CROSS JOINs, NATURAL JOINs, EQUI JOIN and NON-EQUI JOIN.

15) What is the difference between primary key and candidate key?

Every row of a table is identified uniquely by primary key. There is only one primary key for a table. Primary Key is also a candidate key.

By common convention, candidate key can be designated as primary and which can be used for any foreign key references.

16) What do you mean by % and _ in the LIKE statement?

% corresponds to 0 or more characters, _ is exactly one character in the LIKE statement.

17) What is a trigger in MySQL?

A trigger is a set of codes that executes in response to some events.

18) How many Triggers are possible in MySQL?

There are six Triggers allowed to use in MySQL database.

1. Before Insert
2. After Insert
3. Before Update
4. After Update
5. Before Delete
6. After Delete

19) Expand and define ODBC

Open Database Connectivity (ODBC) is an open standard Application Programming Interface (API) for accessing a database.

20) Eliminating Duplicate Rows

Distinct keyword eliminates duplicate rows

21) Sorting Data in a SQL

The ORDER BY statement in SQL is used to sort the fetched data in either ascending or descending according to one or more columns.

- By default ORDER BY sorts the data in ascending order.
- We can use the keyword DESC to sort the data in descending order and the keyword ASC to sort in ascending order.

22) SQL aggregate functions syntax

The SQL COUNT(), AVG() and SUM() Functions

1. The COUNT() function returns the number of rows that matches a specified criteria.
2. The AVG() function returns the average value of a numeric column.
3. The SUM() function returns the total sum of a numeric column.

COUNT() Syntax

```
SELECT COUNT(column_name)
  FROM table_name
  WHERE condition;
```

AVG() Syntax

```
SELECT AVG(column_name)
  FROM table_name
  WHERE condition;
```

SUM() Syntax

```
SELECT SUM(column_name)
    FROM table_name
    WHERE condition;
```

The SQL MIN() and MAX() Functions

- The MIN() function returns the smallest value of the selected column.
- The MAX() function returns the largest value of the selected column.

MIN() Syntax

```
SELECT MIN(column_name)
    FROM table_name
    WHERE condition;
```

MAX() Syntax

```
SELECT MAX(column_name)
    FROM table_name
    WHERE condition;
```

23)

What are the unary operations in Relational Algebra?

PROJECTION and SELECTION.

24)

. What is a query?

A query with respect to DBMS relates to user commands that are used to interact with a data base. The query language can be classified into data definition language and data manipulation language.

25)

Define Entity Set.

Compilation of all entries of any particular type of entry in the database is called Entity Set.

26)

. What is 1 NF (Normal Form)?

The domain of attribute must include only atomic (simple, indivisible) values.

What is 2NF?

A relation schema R is in 2NF if it is in 1NF and every non-prime attribute A in R is fully functionally dependent on primary key.

. What is 3NF?

A relation schema R is in 3NF if it is in 2NF and for every FD X A either of the following is true

1. X is a Super-key of R.
2. A is a prime attribute of R.

In other words, if every non prime attribute is non-transitively dependent on primary key.

What is BCNF (Boyce-Codd Normal Form)?

A relation schema R is in BCNF if it is in 3NF and satisfies an additional constraint that for every FD X A, X must be a candidate key.

27)

. What is Lossless join property?

It guarantees that the spurious tuple generation does not occur with respect to relation schemas after decomposition.

28)

. What is Functional Dependency?

A Functional dependency is denoted by X Y between two sets of attributes X and Y that are subsets of R specifies a constraint on the possible tuple that can form a relation state r of R. The constraint is for any two tuples t1 and t2 in r if t1[X] = t2[X] then they have t1[Y] = t2[Y]. This means the value of X component of a tuple uniquely determines the value of component Y.

29What is an attribute?

It is a particular property, which describes the entity.

30 . What is a Relation Schema and a Relation?

A relation Schema denoted by R(A1, A2, ..., An) is made up of the relation name R and the list of attributes Ai that it contains. A relation is defined as a set of tuples. Let r be the relation which contains set tuples (t1, t2, t3, ..., tn). Each tuple is an ordered list of n-values t=(v1,v2, ..., vn).

31 . What is degree of a Relation?

It is the number of attribute of its relation schema.

32 What is Relationship?

It is an association among two or more entities.

33. What is Relationship set?

The collection (or set) of similar relationships.

34. What is Relationship type?

Relationship type defines a set of associations or a relationship set among a given set of entity types.

35)Datatypes in SQL supported by ORACLE DBMS

DATA TYPE	DESCRIPTION	EXAMPLE
CHAR	• This data type is used to store character strings values of fixed length. • maximum size is 2000 bytes per row	CHAR(10) FOR register number like 2 0 B C A 0 7 8 REGNO CHAR(8) **20BCA001**→ CHAR(8)
VARCHAR(SIZE) Or VARCHAR2(SIZE)	• Variable-length character data. Variable for each row, up to 4000 bytes per row. • **A maximum size must be specified.**	VARCHAR(10) S U M A M A L E E H A P R E S I D E N C Y For name or address NAME Varchar(15)
NUMBER	Integer number without decimal. Max size=40 digits	PH_NO NUMBER(10)
Number(size,d)	Integer number with a decimal point or floating point number.	Number(5,2) is a number that has 3 digits before the decimal and 2 digits after the decimal.

Integer or Int	Integer number size cannot be specified.	
Date	Default format is a string (such as DD-MON-YY)	DOB Date
TIMESTAMP	For representing time, which has 8 positions and its components are HOUR, Minutes and second. Typically in the form HH: MM:SS.	Loginid TIMESTAMP