

one-mark questions and answers for Oracle: : Lathiya Harshal

1. What is Oracle?

- Oracle is a relational database management system (RDBMS) developed by Oracle Corporation.

2. What is an Oracle instance?

- An Oracle instance is a combination of the background processes and memory structures used to manage a database.

3. What is the default extension for an Oracle SQL*Plus script file?

- The default extension is `.sql`.

4. What command is used to retrieve data from an Oracle database?

- The `SELECT` command.

5. What is a schema in Oracle?

- A schema is a collection of database objects owned by a user.

6. What is a synonym in Oracle?

- A synonym is an alias for a database object like a table or a view.

7. What is PL/SQL?

- PL/SQL is Oracle's Procedural Language extension to SQL, allowing for procedural programming constructs.

8. What is the purpose of the `WHERE` clause in SQL?

- The `WHERE` clause is used to filter records that meet specific conditions.

9. What is a primary key?

- A primary key is a unique identifier for a record in a table that cannot be null.

10. What is the `DUAL` table in Oracle?

- `DUAL` is a dummy table used to select a value without querying an actual table.

11. What does the `NVL` function do in Oracle?

- The `NVL` function replaces `NULL` values with a specified value.

12. What is a cursor in Oracle?

- A cursor is a pointer that controls the context area where SQL statements are executed.

13. What is the use of the `COMMIT` statement?

- The `COMMIT` statement saves all changes made during the transaction to the database.

14. What is a sequence in Oracle?

- A sequence is a database object used to generate unique numbers.

15. What is the purpose of the `JOIN` operation?

- The `JOIN` operation is used to combine rows from two or more tables based on a related column.

16. What does the `GROUP BY` clause do?

- The `GROUP BY` clause groups rows that have the same values into summary rows.

17. What is a `VIEW` in Oracle?

- A `VIEW` is a virtual table based on the result of an SQL query.

18. What is a foreign key?

- A foreign key is a column or set of columns that establishes a link between the data in two tables.

19. What is a `TRIGGER` in Oracle?

- A `TRIGGER` is a set of PL/SQL statements that execute automatically in response to certain events on a table or view.

20. What is a rollback?

- A rollback undoes changes made during the current transaction that have not been committed.

21. What is the maximum size of a VARCHAR2 column in Oracle?
- 4000 bytes.
22. What is the purpose of the `ALTER` command in SQL?
- The `ALTER` command is used to modify the structure of a database object like a table or a column.
23. What is the difference between `DELETE` and `TRUNCATE`?
- `DELETE` removes rows one at a time and can be rolled back, while `TRUNCATE` removes all rows from a table.
24. What is an index in Oracle?
- An index is a schema object used to speed up the retrieval of rows by using pointers.
25. What is an Oracle SID?
- Oracle SID (System Identifier) is a unique name that identifies a specific Oracle database instance.
26. What does the `DROP` command do?
- The `DROP` command removes a table or other database object permanently from the database.
27. What is a data type in Oracle?
- A data type defines the kind of value that can be stored in a column, such as `NUMBER`, `VARCHAR2`, `DATE`, etc.
28. What is a `CHECK` constraint in Oracle?
- A `CHECK` constraint ensures that all values in a column meet a specific condition.
29. What is the purpose of the `HAVING` clause?
- The `HAVING` clause is used to filter groups based on a specified condition, often used with `GROUP BY`.
30. What is a transaction in Oracle?
- A transaction is a set of operations that are performed as a single unit of work.
31. What is the difference between `CHAR` and `VARCHAR2` in Oracle?
- `CHAR` stores fixed-length data, while `VARCHAR2` stores variable-length data.
32. What does the `IN` operator do in SQL?
- The `IN` operator is used to specify multiple values in a `WHERE` clause.
33. What is a subquery in Oracle?
- A subquery is a query nested inside another query.
34. What is the function of the `MERGE` statement in Oracle?
- The `MERGE` statement allows for conditional `INSERT`, `UPDATE`, or `DELETE` operations in a single statement.
35. What is the `ROWNUM` pseudo-column?
- `ROWNUM` is a pseudo-column that assigns a unique number to each row returned by a query.
36. What is a `BLOB` data type in Oracle?
- `BLOB` (Binary Large Object) is used to store large binary data such as images or multimedia files.
37. What is the `LIKE` operator used for?
- The `LIKE` operator is used for pattern matching in a `WHERE` clause.
38. What does `FETCH` do in PL/SQL?
- The `FETCH` statement retrieves rows from the result of a query associated with a cursor.
39. What is Oracle's `FLASHBACK` feature?
- Oracle's `FLASHBACK` feature allows recovery of data to a previous point in time without using point-in-time recovery.
40. What does the `SYSDATE` function return?
- The `SYSDATE` function returns the current date and time from the system.

41. What is a sequence generator in Oracle?

- A sequence generator is used to generate sequential numeric values, often used for primary key values.

42. What is the `DBMS_OUTPUT.PUT_LINE` command used for in PL/SQL?

- `DBMS_OUTPUT.PUT_LINE` is used to display output in PL/SQL.

43. What is the `ROWID` in Oracle?

- `ROWID` is a pseudo-column that uniquely identifies a row in a table.

44. What is a `SAVEPOINT` in Oracle?

- A `SAVEPOINT` allows a transaction to be partially rolled back to a specific point without rolling back the entire transaction.

45. When was Oracle Corporation founded?

- Oracle Corporation was founded in 1977.

46. Who were the founders of Oracle Corporation?

- Larry Ellison, Bob Miner, and Ed Oates.

47. What was Oracle's first commercial product?

- Oracle V2, released in 1979.

48. When did Oracle go public?

- Oracle went public in 1986.

49. What is Oracle's flagship database product known for?

- Performance, scalability, and reliability.

fill-in-the-blank questions :

1. The _____ command is used to retrieve data from an Oracle database.

= SELECT

2. A _____ is a unique identifier for a record in a table.

= primary key

3. The _____ data type is used to store variable-length character strings in Oracle.

= VARCHAR2

4. _____ is a set of PL/SQL statements that execute automatically in response to certain events.

= Trigger

5. The _____ command permanently removes a table from the database.

= DROP

6. A _____ is a collection of database objects owned by a user.

= schema

7. The _____ function returns the current date and time in Oracle.

= SYSDATE

8. A _____ table is a table that is automatically created and dropped by Oracle when a session ends.

= temporary table

9. The _____ clause is used to filter records that meet specific conditions in a SQL query.

= WHERE

10. _____ is a database object that stores the results of a query physically, improving performance.

= Materialized view

11. The _____ command is used to save changes made during a transaction to the database.
= COMMIT

12. A _____ constraint ensures that all values in a column meet a specific condition.
= CHECK

13. The _____ pseudo-column uniquely identifies a row in a table.
= ROWID

14. A _____ is a structure that improves the speed of data retrieval.
= index

15. _____ is Oracle's tool for managing and monitoring databases through a web interface.
= Oracle Enterprise Manager

16. The _____ command is used to modify the structure of an existing database object.
= ALTER

17. The _____ command undoes changes made during the current transaction that have not been committed.
= ROLLBACK

18. A _____ allows for conditional insert, update, or delete operations in a single statement.
= MERGE

19. The _____ command combines the results of two or more SELECT statements.
= UNION

20. The _____ feature allows you to restore the database to a previous state.
= FLASHBACK

21. The _____ command is used to create a new table in an Oracle database.
= CREATE

22. A _____ is a collection of data stored in a structured format in a database.
= table

23. The _____ command is used to modify existing records in a table.
= UPDATE

24. A _____ constraint is used to ensure that a value in one column corresponds to a value in another column of a different table.
= foreign key

25. The _____ command removes all records from a table but retains the structure for future use.
= TRUNCATE

26. The _____ clause is used to specify the column by which the result set is sorted.
= ORDER BY

27. The _____ keyword is used to retrieve unique values from a column.
= DISTINCT

28. A _____ is a predefined function in SQL that performs a calculation on a set of values.
= aggregate function

29. The _____ operator is used to check for a specific pattern in a string.
= LIKE

30. A _____ is a named block of PL/SQL code that can accept parameters and perform a specific task.
= procedure

31. The _____ clause groups rows that have the same values in specified columns.
= GROUP BY
32. The _____ is a type of backup that captures the entire state of the database at a specific point in time.
= full backup
33. The _____ command allows you to view the structure of a table.
= DESC (or DESCRIBE)
34. A _____ is a SQL statement that can return multiple rows of data based on specific conditions.
= query
35. The _____ command is used to create an alias for a table or a column in a SQL statement.
= AS
36. The _____ clause allows you to specify conditions for aggregated data.
= HAVING
37. The _____ command is used to grant permissions on a database object to a user.
= GRANT
38. A _____ is a temporary storage area in memory that holds data retrieved by a query.
= result set
39. The _____ function is used to retrieve the highest value from a specified column.
= MAX
40. The _____ function is used to retrieve the lowest value from a specified column.
= MIN
41. A _____ is a structured collection of related data elements stored in a database.
= record
42. The _____ function returns the number of rows that match a specified condition.
= COUNT
43. A _____ is a mechanism for controlling concurrent access to a database.
= lock
44. The _____ command is used to remove a view from the database.
= DROP VIEW
45. The _____ keyword specifies the number of rows returned by a query.
= LIMIT (or FETCH FIRST)
46. A _____ is a collection of related database objects such as tables, indexes, and views.
= schema
47. The _____ function is used to concatenate two or more strings in SQL.
= CONCAT
48. The _____ command is used to retrieve data from one or more tables based on a join condition.
= SELECT
49. A _____ is a collection of procedures and functions stored in the database for reuse.
= package
50. The _____ command is used to create an index on one or more columns of a table.
= CREATE INDEX

full forms :

1. SQL € Structured Query Language
2. DML € Data Manipulation Language
3. DDL € Data Definition Language
4. DCL € Data Control Language
5. TCL € Transaction Control Language
6. BLOB € Binary Large Object
7. CLOB € Character Large Object
8. RDBMS € Relational Database Management System
9. DBMS € Database Management System
10. PL/SQL € Procedural Language / Structured Query Language

important SQL queries in Oracle,

1. Select All Records

= SELECT * FROM table_name;

2. Select Specific Columns

= SELECT column1, column2 FROM table_name;

3. Where Clause

= SELECT * FROM table_name WHERE condition;

4. Order By

= SELECT * FROM table_name ORDER BY column_name ASC; -- Ascending

= SELECT * FROM table_name ORDER BY column_name DESC; -- Descending

5. Count Records

= SELECT COUNT(*) FROM table_name;

6. Distinct Values

= SELECT DISTINCT column_name FROM table_name;

7. Insert a Record

= INSERT INTO table_name (column1, column2) VALUES (value1, value2);

8. Update a Record

= UPDATE table_name SET column1 = value1 WHERE condition;

9. Delete a Record

= DELETE FROM table_name WHERE condition;

10. Group By

= SELECT column_name, COUNT(*) FROM table_name GROUP BY column_name;

11. Join Two Tables

SELECT a.column1, b.column2

FROM table1 a

JOIN table2 b ON a.common_column = b.common_column;

12. Subquery

SELECT column1

FROM table_name

WHERE column2 = (SELECT column2 FROM another_table WHERE condition);

13. Use of Aliases

SELECT column1 AS alias_name FROM table_name;

14. Limit Rows (Using ROWNUM)

SELECT * FROM table_name WHERE ROWNUM <= n; -- n is the number of rows you want

15. Using LIKE for Pattern Matching

SELECT * FROM table_name WHERE column_name LIKE 'pattern%'; -- % for wildcard

16. Using BETWEEN for Range Queries

=SELECT * FROM table_name WHERE column_name BETWEEN value1 AND value2;

17. Using IN for Multiple Values

=SELECT * FROM table_name WHERE column_name IN (value1, value2, value3);

Using IS NULL

=SELECT * FROM table_name WHERE column_name IS NULL;

19. Using CASE Statement

```
SELECT column1,  
       CASE  
         WHEN condition1 THEN 'Result1'  
         WHEN condition2 THEN 'Result2'  
         ELSE 'OtherResult'  
       END AS alias_name  
FROM table_name;
```

20. Using Aggregate Functions

- **SUM:**

SELECT SUM(column_name) FROM table_name;

- **AVG:**

SELECT AVG(column_name) FROM table_name;

- **MAX:**

SELECT MAX(column_name) FROM table_name;

- **MIN:**

SELECT MIN(column_name) FROM table_name;

Using GROUP BY with HAVING Clause

```
SELECT column_name, COUNT(*)  
FROM table_name  
GROUP BY column_name  
HAVING COUNT(*) > value;
```

22. Using JOIN Types

- **Left Join:**

```
SELECT a.column1, b.column2  
FROM table1 a  
LEFT JOIN table2 b ON a.common_column = b.common_column;
```

- **Right Join:**

```
SELECT a.column1, b.column2  
FROM table1 a  
RIGHT JOIN table2 b ON a.common_column = b.common_column;
```

- **Full Outer Join:**

```
SELECT a.column1, b.column2  
FROM table1 a  
FULL OUTER JOIN table2 b ON a.common_column = b.common_column;
```

23. Using UNION to Combine Results

```
SELECT column1 FROM table1  
UNION  
SELECT column1 FROM table2;
```

24. Using UNION ALL to Include Duplicates

```
SELECT column1 FROM table1  
UNION ALL  
SELECT column1 FROM table2;
```

25. Using ROW_NUMBER for Row Numbering

```
SELECT column1, ROW_NUMBER() OVER (ORDER BY column2) AS row_num  
FROM table_name;
```

26. Using TRUNC to Format Dates

```
SELECT TRUNC(date_column) FROM table_name; -- Truncates the time part of a date
```

27. Using SYSDATE for Current Date and Time

```
SELECT SYSDATE FROM dual; -- dual is a dummy table in Oracle
```

28. Using TO_CHAR for Formatting Dates

```
SELECT TO_CHAR(date_column, 'DD-MM-YYYY') FROM table_name;
```

29. Using TO_DATE to Convert String to Date

```
SELECT TO_DATE('2024-10-21', 'YYYY-MM-DD') FROM dual;
```

30. Using NVL for Null Value Replacement

```
SELECT NVL(column_name, 'Default Value') FROM table_name;
```

Using CONCAT for String Concatenation

```
SELECT CONCAT(column1, column2) AS full_name FROM table_name;
```

32. Using SUBSTR for String Substring

```
SELECT SUBSTR(column_name, start_position, length) FROM table_name;
```

33. Using LENGTH to Get String Length

```
SELECT LENGTH(column_name) FROM table_name;
```

34. Using EXISTS for Subquery Check

```
SELECT column1  
FROM table_name a  
WHERE EXISTS (SELECT 1 FROM table_name b WHERE condition);
```

35. Using ROWNUM with Order By

```
SELECT * FROM (SELECT * FROM table_name ORDER BY column_name) WHERE ROWNUM <= n;
```