

Technical SQL Interview Questions for Beginners

Now, let's move on to the technical SQL interview questions and some potential answers to them.

When answering technical questions, the best strategy is to give as precise answers as possible. It may look like an attempt to deviate from the main topic. In addition, it may provoke additional questions about which you can feel less confident.

1. What is SQL?

It stands for **Structured Query Language**, and it's a programming language used for interaction with relational database management systems (RDBMS). This includes fetching, updating, inserting, and removing data from tables.

2. What are SQL dialects? Give some examples.

The various versions of SQL, both free and paid, are also called SQL dialects. All the flavors of SQL have a very similar syntax and vary insignificantly only in additional functionality. Some examples are Microsoft SQL Server, PostgreSQL, MySQL, SQLite, T-SQL, Oracle, and MongoDB.

3. What are the main applications of SQL?

Using SQL, we can:

- create, delete, and update tables in a database
- access, manipulate, and modify data in a table
- retrieve and summarize the necessary information from a table or several tables
- add or remove certain rows or columns from a table

All in all, SQL allows querying a database in multiple ways. In addition, SQL easily integrates with other programming languages, such as Python or R, so we can use their combined power.

4. What is an SQL statement? Give some examples.

Also known as an SQL command. It's a string of characters interpreted by the SQL engine as a legal command and executed accordingly. Some examples of SQL statements are `SELECT`, `CREATE`, `DELETE`, `DROP`, `REVOKE`, and so on.

5. What types of SQL commands (or SQL subsets) do you know?

- **Data Definition Language (DDL)** – to define and modify the structure of a database.

- **Data Manipulation Language (DML)** – to access, manipulate, and modify data in a database.
- **Data Control Language (DCL)** – to control user access to the data in the database and give or revoke privileges to a specific user or a group of users.
- **Transaction Control Language (TCL)** – to control transactions in a database.
- **Data Query Language (DQL)** – to perform queries on the data in a database to retrieve the necessary information from it.

6. Give some examples of common SQL commands of each type.

- **DDL:** CREATE, ALTER TABLE, DROP, TRUNCATE, and ADD COLUMN
- **DML:** UPDATE, DELETE, and INSERT
- **DCL:** GRANT and REVOKE
- **TCL:** COMMIT, SET TRANSACTION, ROLLBACK, and SAVEPOINT
- **DQL:** – SELECT

7. What is a database?

A structured storage space where the data is kept in many tables and organized so that the necessary information can be easily fetched, manipulated, and summarized.

8. What is DBMS, and what types of DBMS do you know?

It stands for Database Management System, a software package used to perform various operations on the data stored in a database, such as accessing, updating, wrangling, inserting, and removing data. There are various types of DBMS, such as relational, hierarchical, network, graph, or object-oriented. These types are based on the way the data is organized, structured, and stored in the system.

9. What is RDBMS? Give some examples of RDBMS.

It stands for Relational Database Management System. It's the most common type of DBMS used for working with data stored in multiple tables related to each other by means of shared keys. The SQL programming language is designed to interact with RDBMS. Some examples of RDBMS are MySQL, PostgreSQL, Oracle, MariaDB, etc.

10. What are tables and fields in SQL?

A table is an organized set of related data stored in a tabular form, i.e., in rows and columns. A field is another term for a column of a table.

11. What is an SQL query, and what types of queries do you know?

A query is a piece of code written in SQL to access or modify data from a database.

There are two types of SQL queries: **select** and **action** queries. The first ones are used to retrieve the necessary data (this also includes limiting, grouping, ordering the data, extracting the data from multiple tables, etc.), while the second ones are used to create, add, delete, update, rename the data, etc.

12. What is a subquery?

Also called an inner query, a query placed inside another query, or an outer query. A subquery may occur in the clauses such as `SELECT`, `FROM`, `WHERE`, `UPDATE`, etc. It's also possible to have a subquery inside another subquery. The innermost subquery is run first, and its result is passed to the containing query (or subquery).

13. What types of SQL subqueries do you know?

- **Single-row** – returns at most one row.
- **Multi-row** – returns at least two rows.
- **Multi-column** – returns at least two columns.
- **Correlated** – a subquery related to the information from the outer query.
- **Nested** – a subquery inside another subquery.

14. What is a constraint, and why use constraints?

A set of conditions defining the type of data that can be input into each column of a table. Constraints ensure data integrity in a table and block undesired actions.

15. What SQL constraints do you know?

- `DEFAULT` – provides a default value for a column.
- `UNIQUE` – allows only unique values.
- `NOT NULL` – allows only non-null values.
- `PRIMARY KEY` – allows only unique and strictly non-null values (`NOT NULL` and `UNIQUE`).
- `FOREIGN KEY` – provides shared keys between two or more tables.

16. What is a join?

A clause used to combine and retrieve records from two or multiple tables. SQL tables can be joined based on the relationship between the columns of those tables. Check out our [SQL joins tutorial](#) for more context, plus our dedicated guide to [SQL joins interview questions](#).

17. What types of joins do you know?

- `(INNER) JOIN` – returns only those records that satisfy a defined join condition in both (or all) tables. It's a default SQL join.

- `LEFT (OUTER) JOIN` – returns all records from the left table and those records from the right table that satisfy a defined join condition.
- `RIGHT (OUTER) JOIN` – returns all records from the right table and those records from the left table that satisfy a defined join condition.
- `FULL (OUTER) JOIN` – returns all records from both (or all) tables. It can be considered as a combination of left and right joins.

18. What is a primary key?

A column (or multiple columns) of a table to which the `PRIMARY KEY` constraint was imposed to ensure unique and non-null values in that column. In other words, a primary key is a combination of the `NOT NULL` and `UNIQUE` constraints. The primary key uniquely identifies each record of the table. Each table should contain a primary key and can't contain more than one primary key.

19. What is a unique key?

A column (or multiple columns) of a table to which the `UNIQUE` constraint was imposed to ensure unique values in that column, including a possible `NULL` value (the only one).

20. What is a foreign key?

A column (or multiple columns) of a table to which the `FOREIGN KEY` constraint was imposed to link this column to the primary key in another table (or several tables). The purpose of foreign keys is to keep connected various tables of a database.

21. What is an index?

A special data structure related to a database table and used for storing its important parts and enabling faster data search and retrieval. Indexes are especially efficient for large databases, where they significantly enhance query performance.

22. What types of indexes do you know?

- **Unique index** – doesn't allow duplicates in a table column and hence helps maintain data integrity.
- **Clustered index** – defines the physical order of records of a database table and performs data searching based on the key values. A table can have only one clustered index.
- **Non-clustered index** – keeps the order of the table records that don't match the physical order of the actual data on the disk. It means that the data is stored in one place and a non-clustered index – in another one. A table can have multiple non-clustered indexes.

23. What is a schema?

A collection of database structural elements such as tables, stored procedures, indexes, functions, and triggers. It shows the overall database architecture, specifies the relationships between

various objects of a database, and defines different access permissions for them. Read our [database schema guide](#) for a deeper understanding.

24. What is a SQL comment?

A human-readable clarification of what a particular piece of code does. SQL code comments can be single-line (preceded by a double dash `--`) or span over multiple lines (as follows: `/*comment_text*/`). When the SQL engine runs, it ignores code comments. The purpose of adding SQL code comments is to make the code more comprehensive for those people who will read it in the future.

25. What is a SQL operator?

A reserved character, a combination of characters, or a keyword used in SQL queries to perform a specific operation. SQL operators are commonly used with the `WHERE` clause to set a condition (or conditions) for filtering the data.

26. What types of SQL operators do you know?

- **Arithmetic** (+, -, *, /, etc.)
- **Comparison** (>, <, =, >=, etc.)
- **Compound** (+=, -=, *=, /=, etc.)
- **Logical** (AND, OR, NOT, BETWEEN, etc.)
- **String** (% , _ , + , ^ , etc.)
- **Set** (UNION, UNION ALL, INTERSECT, and MINUS (or EXCEPT))

27. What is an alias?

A temporary name given to a table (or a column in a table) while executing a certain SQL query. Aliases are used to improve the code readability and make the code more compact. An alias is introduced with the `AS` keyword:

```
SELECT col_1 AS column
```

```
FROM table_name;
```

POWERED BY

28. What is a clause?

A condition imposed on a SQL query to filter the data to obtain the desired result. Some examples are `WHERE`, `LIMIT`, `HAVING`, `LIKE`, `AND`, `OR`, `ORDER BY`, etc.

29. What are some common statements used with the `SELECT` query?

The most common ones are `FROM`, `GROUP BY`, `JOIN`, `WHERE`, `ORDER BY`, `LIMIT`, and `HAVING`.

30. How to create a table?

Using the `CREATE TABLE` statement. For example, to create a table with three columns of predefined datatypes, we apply the following syntax:

```
CREATE TABLE table_name (col_1 datatype,  
  
    col_2 datatype,  
  
    col_3 datatype);
```

POWERED BY

31. How to update a table?

Using the `UPDATE` statement. The syntax is:

```
UPDATE table_name  
  
SET col_1 = value_1, column_2 = value_2  
  
WHERE condition;
```

POWERED BY

32. How to delete a table from a database?

Using the `DROP TABLE` statement. The syntax is: `DROP TABLE table_name;.`

33. How to get the count of records in a table?

Using the `COUNT()` aggregate function with the asterisk passed as its argument: `SELECT COUNT(*) FROM table_name;.`

34. How to sort records in a table?

Using the `ORDER BY` statement:

```
SELECT * FROM table_name  
  
ORDER BY col_1;
```

POWERED BY

We can specify that we need a descending order using the `DESC` keyword; otherwise, the order will be ascending by default. Also, we can sort by more than one column and specify for each one, ascending or descending order separately. For example:

```
SELECT * FROM table_name

ORDER BY col_1 DESC, col_3, col_6 DESC;

POWERED BY
```

35. How to select all columns from a table?

Using the asterisk `*` with the `SELECT` statement. The syntax is: `SELECT * FROM table_name;`

36. How to select common records from two tables?

Using the `INTERSECT` statement:

```
SELECT * FROM table_1

INTERSECT

SELECT * FROM table_1;

POWERED BY
```

37. What is the `DISTINCT` statement and how do you use it?

This statement is used with the `SELECT` statement to filter out duplicates and return only unique values from a column of a table. The syntax is:

```
SELECT DISTINCT col_1

FROM table_name;

POWERED BY
```

38. What are relationships? Give some examples.

Relationships are the connections and correlations between entities, basically meaning how two or more tables of a database are related to one another. For example, we can find an ID of the same client in a table on sales data and in a customer table.

39. What is a `NULL` value? How is it different from zero or a blank space?

A `NULL` value indicates the absence of data for a certain cell of a table. Instead, zero is a valid numeric value, and an empty string is a legal string of zero length.

40. What is the difference between SQL and NoSQL?

SQL databases are relational, structured, and use tables with predefined schemas, while NoSQL databases are non-relational, schema-less, and designed to handle unstructured or semi-structured data.

41. What are some common challenges when working with SQL databases?

Challenges include performance tuning for large datasets, managing indexing strategies, ensuring data integrity with constraints, handling concurrent transactions, and optimizing query execution.

Intermediate SQL Interview Questions

In this section, we take a look at the most popular intermediate SQL questions and answers so that you'll know what to expect from your interviewer.

42. What is a function in SQL, and why use functions?

A database object representing a set of SQL statements frequently used for a certain task. A function takes in some input parameters, performs calculations or other manipulations on them, and returns the result. Functions help improve code readability and avoid repetition of the same code snippets.

43. What types of SQL functions do you know?

- **Aggregate functions** – work on multiple, usually grouped records for the provided columns of a table, and return a single value (usually by group).
- **Scalar functions** – work on each individual value and return a single value.

On the other hand, SQL functions can be built-in (defined by the system) or user-defined (created by the user for their specific needs).

44. What aggregate functions do you know?

- `AVG ()` – returns the average value
- `SUM ()` – returns the sum of values
- `MIN ()` – returns the minimum value
- `MAX ()` – returns the maximum value
- `COUNT ()` – returns the number of rows, including those with null values
- `FIRST ()` – returns the first value from a column
- `LAST ()` – returns the last value from a column

45. What scalar functions do you know?

- `LEN()` (in other SQL flavors – `LENGTH()`) – returns the length of a string, including the blank spaces
- `UCASE()` (in other SQL flavors – `UPPER()`) – returns a string converted to the upper case
- `LCASE()` (in other SQL flavors – `LOWER()`) – returns a string converted to the lower case
- `INITCAP()` – returns a string converted to the title case (i.e., each word of the string starts from a capital letter)
- `MID()` (in other SQL flavors – `SUBSTR()`) – extracts a substring from a string
- `ROUND()` – returns the numerical value rounded to a specified number of decimals
- `NOW()` – returns the current date and time

46. What are case manipulation functions? Give some examples.

Case manipulation functions represent a subset of character functions, and they're used to change the case of the text data. With these functions, we can convert the data into the upper, lower, or title case.

- `UCASE()` (in other SQL flavors – `UPPER()`) – returns a string converted to the upper case
- `LCASE()` (in other SQL flavors – `LOWER()`) – returns a string converted to the lower case
- `INITCAP()` – returns a string converted to the title case (i.e., each word of the string starts from a capital letter)

47. What are character manipulation functions? Give some examples.

Character manipulation functions represent a subset of character functions, and they're used to modify the text data.

- `CONCAT()` – joins two or more string values appending the second string to the end of the first one
- `SUBSTR()` – returns a part of a string satisfying the provided start and end points
- `LENGTH()` (in other SQL flavors – `LEN()`) – returns the length of a string, including the blank spaces
- `REPLACE()` – replaces all occurrences of a defined substring in a provided string with another substring
- `INSTR()` – returns the numeric position of a defined substring in a provided string
- `LPAD()` and `RPAD()` – return the padding of the left-side/right-side character for right-justified/left-justified value
- `TRIM()` – removes all the defined characters, as well as white spaces, from the left, right, or both ends of a provided string

48. What is the difference between local and global variables?

Local variables can be accessed only inside the function in which they were declared. Instead, global variables, being declared outside any function, are stored in fixed memory structures and can be used throughout the entire program.

49. What is the difference between SQL and PL/SQL?

SQL is a standard language for querying and managing relational databases, primarily used for data manipulation and retrieval. PL/SQL (Procedural Language/SQL) is an extension of SQL used in Oracle databases that includes procedural programming constructs like loops, conditions, and exception handling, allowing for complex business logic to be implemented within the database. We have another article on the [Top 20 PL/SQL Interview Questions and Answers](#) which is a good review if you know you will be asked about your knowledge of Oracle.

50. What is the difference between LEFT JOIN and LEFT OUTER JOIN?

There is no [difference between LEFT JOIN and LEFT OUTER JOIN](#). They are interchangeable. SQL allows the `OUTER` keyword to be optional, so `LEFT JOIN` is simply a shorthand for `LEFT OUTER JOIN`. Both return all records from the left table and the matching records from the right table.

51. What is indexing in SQL, and how does it improve performance?

Indexing creates a special data structure that speeds up data retrieval by allowing the database to find rows more efficiently. It works like an optimized lookup table, reducing the need for full table scans. However, excessive indexing can slow down insert, update, and delete operations due to the need for index maintenance.

52. What is a stored procedure, and how is it different from a function?

A [stored procedure](#) is a precompiled set of SQL statements that can be executed as a single unit to perform a specific task. Unlike functions, stored procedures can return multiple result sets and modify database objects, while functions typically return a single value and cannot modify data.

53. What is the default data ordering with the ORDER BY statement, and how do you change it?

By default, the order is ascending. To change it to descending, we need to add the `DESC` keyword as follows:

```
SELECT * FROM table_name
```

```
ORDER BY col_1 DESC;
```

POWERED BY

54. What set operators do you know?

- `UNION` – returns the records obtained by at least one of two queries (excluding duplicates)

- `UNION ALL` – returns the records obtained by at least one of two queries (including duplicates)
- `INTERSECT` – returns the records obtained by both queries
- `EXCEPT` (called `MINUS` in MySQL and Oracle) – returns only the records obtained by the first query but not the second one

55. What operator is used in the query for pattern matching?

The `LIKE` operator in combination with the `%` and `_` wildcards. The `%` wildcard represents any number of characters including zero, while `_` – strictly one character.

56. What is the difference between a primary key and a unique key?

While both types of keys ensure unique values in a column of a table, the first one uniquely identifies each record of the table, and the second one prevents duplicates in that column.

57. What is a composite primary key?

The primary key of a table, based on multiple columns.

58. What is the order of appearance of the common statements in the SELECT query?

`SELECT – FROM – JOIN – ON – WHERE – GROUP BY – HAVING – ORDER BY – LIMIT`

59. In which order does the interpreter execute the common statements in the SELECT query?

Here is the [SQL order of execution](#):

`FROM – JOIN – ON – WHERE – GROUP BY – HAVING – SELECT – ORDER BY – LIMIT`

60. What is a view, and why use it?

A virtual table containing a subset of data retrieved from one or more database tables (or other views). Views take very little space, simplify complex queries, limit access to the data for security reasons, enable data independence, and summarize data from multiple tables.

61. Can we create a view based on another view?

Yes. This is also known as nested views. However, we should avoid nesting multiple views since the code becomes difficult to read and debug.

62. Can we still use a view if the original table is deleted?

No. Any views based on that table will become invalid after deleting the base table. If we try to use such a view anyway, we'll receive an error message.

63. What types of SQL relationships do you know?

- **One-to-one** – each record in one table corresponds to only one record in another table
- **One-to-many** – each record in one table corresponds to several records in another table
- **Many-to-many** – each record in both tables corresponds to several records in another table

64. What are the possible values of a BOOLEAN data field?

In some SQL flavors, such as PostgreSQL, the BOOLEAN data type exists explicitly and takes values `TRUE`, `FALSE`, or `NULL`. In other flavors, such as Microsoft SQL Server, the BIT datatype is used to store Boolean values as integers 1 (true) or 0 (false).

65. What is normalization in SQL, and why use it?

Normalization is a process of database design that includes organizing and restructuring data in a way to reduce data redundancy, dependency, duplication, and inconsistency. This leads to enhanced data integrity, more tables within the database, more efficient data access and security control, and greater query flexibility.

66. What is denormalization in SQL, and why use it?

Denormalization is the process opposite of normalization: it introduces data redundancy and combines data from multiple tables. Denormalization optimizes the performance of the database infrastructure in situations when read operations are more important than write operations since it helps avoid complex joins and reduces the time of query running.

67. What is the difference between renaming a column and giving an alias to it?

Renaming a column means permanently changing its actual name in the original table. Giving an alias to a column means giving it a temporary name while executing an SQL query, with the purpose to make the code more readable and compact.

68. What is the difference between nested and correlated subqueries?

A correlated subquery is an inner query nested in a bigger (outer) query that refers to the values from the outer query for its execution, meaning that a correlated subquery depends on its outer query. Instead, a non-correlated subquery doesn't rely on the data from the outer query and can be run independently of it.

69. What is the difference between clustered and non-clustered indexes?

While a clustered index **defines the physical order of records** of a table and performs data searching based on the key values, a non-clustered index **keeps the order of records that do not match the physical order of the actual data** on the disk. A table can have only one clustered index but many non-clustered ones.

70. What is the CASE() function?

The way to implement the *if-then-else* logic in SQL. This function sequentially checks the provided conditions in the `WHEN` clauses and returns the value from the corresponding `THEN` clause when the first condition is satisfied. If none of the conditions is satisfied, the function returns the value from the `ELSE` clause in case it's provided, otherwise, it returns `NULL`. The syntax is:

CASE

WHEN condition_1 **THEN** value_1

WHEN condition_2 **THEN** value_2

WHEN condition_3 **THEN** value_3

...

ELSE value

END;

POWERED BY

71. What is the difference between the DELETE and TRUNCATE statements?

`DELETE` is a reversible DML (Data Manipulation Language) command used to delete one or more rows from a table based on the conditions specified in the `WHERE` clause. Instead, `TRUNCATE` is an irreversible DDL (Data Definition Language) command used to delete all rows from a table. `DELETE` works slower than `TRUNCATE`. Also, we can't use the `TRUNCATE` statement for a table containing a foreign key.

72. What is the difference between the DROP and TRUNCATE statements?

`DROP` deletes a table from the database completely, including the table structure and all the associated constraints, relationships with other tables, and access privileges. `TRUNCATE` deletes all rows from a table without affecting the table structure and constraints. `DROP` works slower than `TRUNCATE`. Both are irreversible DDL (Data Definition Language) commands.

73. What is the difference between the HAVING and WHERE statements?

The first one works on aggregated data after they are grouped, while the second one checks each row individually. If both statements are present in a query, they appear in the following order: `WHERE` – `GROUP BY` – `HAVING`. The SQL engine interprets them also in the same order.

74. How do you add a record to a table?

Using the `INSERT INTO` statement in combination with `VALUES`. The syntax is:

```
INSERT INTO table_name  
  
VALUES (value_1, value_2, ...);  
  
POWERED BY
```

75. How do you delete a record from a table?

Using the `DELETE` statement. The syntax is:

```
DELETE FROM table_name  
  
WHERE condition;  
  
POWERED BY
```

In this way, we can also delete multiple records if they satisfy the provided condition.

76. How do you add a column to a table?

Using the `ALTER TABLE` statement in combination with `ADD`. The syntax is:

```
ALTER TABLE table_name  
  
ADD column_name datatype;  
  
POWERED BY
```

77. How do you rename a column of a table?

Using the `ALTER TABLE` statement in combination with `RENAME COLUMN ... TO ...`. The syntax is:

```
ALTER TABLE table_name  
  
RENAME COLUMN old_column_name TO new_column_name;
```

78. How do you delete a column from a table?

Using the `ALTER TABLE` statement in combination with `DROP COLUMN`. The syntax is:

```
ALTER TABLE table_name  
  
DROP COLUMN column_name;
```

79. How do you select all even or all odd records in a table?

By checking the remainder of the division by 2. In some SQL versions (e.g., PostgreSQL and MySQL), we use the `MOD` function, in the others (Microsoft SQL Server and SQLite) – the modulo operator (`%`). To select all even records using `MOD`:

```
SELECT * FROM table_name  
  
WHERE MOD(ID_column, 2) = 0;
```

To select all even records using `%`:

```
SELECT * FROM table_name  
  
WHERE ID_column % 2 = 0;
```

To select all odd records, the syntax is identical in both cases, only that we would use the inequality operator `<>` instead of `=`.

80. How to prevent duplicate records when making a query?

Using the `DISTINCT` statement in combination with `SELECT` or creating a unique key for that table.

81. How do you insert many rows in a table?

Using the `INSERT INTO` statement in combination with `VALUES`. The syntax is:

```
INSERT INTO table_name
```

```
VALUES (value_1, value_2, ...),
```

```
(value_3, value_4, ...),
```

```
(value_5, value_6, ...),
```

```
...;
```

POWERED BY

82. How do you find the nth highest value in a column of a table?

Using the `OFFSET` clause. For example, to find the 6th highest value from a column, we would use the following syntax:

```
SELECT * FROM table_name
```

```
ORDER BY column_name DESC
```

```
LIMIT 1
```

```
OFFSET 5;
```

POWERED BY

83. How do you find the values in a text column of a table that start with a certain letter?

Using the `LIKE` operator in combination with the `%` and `_` wildcards. For example, we need to find all surnames in a table that start with "A". The query is:

```
SELECT * FROM table_name
```

```
WHERE surname LIKE 'A_';
```

POWERED BY

Here, we assume that a surname must contain at least two letters. Without this assumption (meaning that a surname can be just A), the query is as follows:

```
SELECT * FROM table_name
```

```
WHERE surname LIKE 'A%';
```


84. How do you find the last id in a table?

Using the `MAX()` function. Otherwise, in many SQL versions, we can use the following syntax:

```
SELECT id  
  
FROM table_name  
  
ORDER BY id DESC  
  
LIMIT 1;
```

POWERED BY

or in Microsoft SQL Server:

```
SELECT TOP 1 id  
  
FROM table_name  
  
ORDER BY id DESC
```

POWERED BY

85. How to select random rows from a table?

Using the `RAND()` function in combination with `ORDER BY` and `LIMIT`. In some SQL flavors, such as PostgreSQL, it's called `RANDOM()`. For example, the following code will return five random rows from a table in MySQL:

```
SELECT * FROM table_name  
  
ORDER BY RAND()  
  
LIMIT 5;
```

1.What is the full form of DDL in Oracle DB?

- A. Data Deleting Language
- B. Data Definition Language

- C. Data Delegating Language
- D. Dummy Data Language

Answer: B. DDL is one of the categories of SQL which stands for Data Definition Language. Other SQL types are DML, DCL, and TCL.

2.DDL statements are used for which of the following Oracle database objects?

- A. Tables
- B. Sub-queries
- C. Rows
- D. Columns

Answer: A. DDL contains commands like CREATE, ALTER and ANALYZE which are used to CREATE TABLEs, view stored subprograms and packages in a database schema.

3.What is the basic unit of storage in Oracle Database that contains data?

- A. View
- B. Column
- C. Query
- D. Table

Answer: D. Table is the basic unit of physical storage of data in Oracle database.

4.Which of the below options best define a View?

- A. It is the shorter form of a table
- B. It is the logical representation of the subsets from one or more tables
- C. It has only one row and one column
- D. None of the above

Answer: B. View is a query which behaves like a window to format the data contained in one or more tables. Views do not contain any physical data but just a query which are created during runtime.

5. Which of the following are database objects?

- A. Table
- B. Sequence
- C. Synonym
- D. All of the above

Answer: D. Objects which are physically stored in database schema are database objects.

6. Which of the following database objects generate numeric values?

- A. Table
- B. View
- C. Index
- D. Sequence

Answer: D. Sequence are used to generate unique values starting with a definite value and incremented by a specified factor. A sequence can be created to generate a series of integers. The values generated by a sequence can be stored in any table. A sequence is created with the CREATE SEQUENCE command.

7. Which of the following database objects gives an alternative name to an object?

- A. Synonym
- B. Sequence
- C. View
- D. Index

Answer: A. A synonym provides a permanent alias for a database object. A public synonym is available to any database user. A private synonym is available only to the user who created it. A synonym is created by using the CREATE SYNONYM command. A synonym is deleted by using the DROP SYNONYM command. Only a user with DBA privileges can drop a public synonym.

8. Which of the following database objects improves the performance of some queries?

- A. Table
- B. Synonym
- C. View
- D. Index

Answer: D.

9. When a table can be created?

- A. When the database is not being used by any user
- B. When the database is newly created
- C. It can be created any time, even when a user is using the database
- D. None of the above

Answer: C. An index can be created to speed up the query process. DML operations are always slower when indexes exist. Oracle 11g creates an index for PRIMARY KEY and UNIQUE constraints automatically. An explicit index is created with the CREATE INDEX command. An index can be used by Oracle 11g automatically if a query criterion or sort operation is based on a column or an expression used to create the index.

10. What is true about a table?

- A. It is not mandatory to specify the size of a table
- B. The size of each table is the same
- C. A table can be modified online
- D. None of the above

Answer: A, C.

11. A table named 123_A is created for storing the number of employees in an organization. What is wrong in the name of the table?

- A. The name of a table cannot start with a digit
- B. Nothing is wrong in this name.
- C. You cannot use an underscore while naming a table
- D. None of the above

Answer: A. As per the object naming conventions, table name must start with an alphabet.

12. What is the range of number of letters a table name can have?

- A. 1-20 characters
- B. 1-10 characters
- C. 1-30 characters
- D. 1-50 characters

Answer: C. A table name cannot exceed more than 30 characters.

13 Which of the following characters can be used to name a table?

- A. A to Z
- B. a to z
- C. 0 to 9
- D. All of the above

Answer: D. As per the standard naming convention in Oracle, object's name can contain alphabets in any case. Mandatorily, first place is for letters while the rest can be mix of letters and digits.

14. Which of the following special characters can be used to name a table?

- A. @
- B. #
- C. \$
- D. _ (underscore)

Answer: B, C, D. No other special character, except (#, \$, _), are allowed while naming a table. Use of special characters in the table name is discouraged.

15. What is true about the name of a table?

- A. A table can have a name which is used by some other object owned by the same user
- B. A sequence and a table can have same names
- C. A view and a table can have the same name
- D. A table name must not duplicate the name of another object owned by the same user

Answer: D. By virtue of namespace, a table name cannot be same as any other schema objects. Schema objects which share the same namespace include tables, views, sequences, private synonyms, stored procedures, stored functions, packages, materialized views, and user-defined types.

16. You create a table and name it as COUNT. What will be the outcome of CREATE TABLE script?

- A. The table will not be created
- B. The table will be created and an underscore will be added automatically to the name COUNT_
- C. An ORA error will be thrown
- D. The table COUNT will be created without any errors

Answer: A, C. You cannot create a table with the name same as an Oracle Server reserved word.

17. You create a table using quoted identifiers ' '. How will you refer this table?

- A. 'table_name'
- B. "table_name"
- C. Either of A or B
- D. None of the above

Answer: B. If the table is created with the name having a quoted identifier, it must be addressed using double quotes. Using quoted identifiers is not recommended. Quoted identifiers are case-sensitive

18. You create a table named EMPLOYEES. What among the following is possible?

- A. It can be referred to as eMPLOYEES
- B. It can be referred to as EMPloyees
- C. It can be referred to as employees
- D. All of the above

Answer: D. Unquoted objects names are not case-sensitive in Oracle.

19. What among the following are the pre-requisites for creating a table?

- A. CREATE TABLE privilege
- B. Storage space
- C. Data in the table
- D. None of the above

Answer: A, B. A user must possess the CREATE TABLE privilege and must have sufficient space to allocate the initial extent to the table segment.

20. What is the syntax for creating a table?

- A. CREATE TABLE [schema.] table (column datatype [DEFAULT expr] [,..]);
- B. CREATE TABLE INTO [schema.] table (column datatype [DEFAULT expr] [,..]);
- C. CREATE TABLE VALUES [schema.] table (column datatype [DEFAULT expr] [,..]);
- D. None of the above

Answer: A.

21. Pick the element which you must specify while creating a table.

- A. Column name
- B. Column Data type
- C. Column size
- D. All of the above

Answer: D. A table must have at least one column, its data type specification, and precision (if required).

22. A user named "Kevin" wants to access a table which is owned by another user named "Jonathan". Which of the following will work for Kevin?

- A. Select * from Kevin.employees;
- B. Select * from jonathan.employees;
- C. Either of A or B
- D. None of the above

Answer: B.

23. What is true about a schema?

- A. A schema is owned by a database user and has the same name as that user
- B. Each user owns a single schema
- C. Schema objects include database links
- D. All of the above

Answer: D. The user space in a database is known as schema. A schema contains the objects which are owned or accessed by the user. Each user can have single schema of its own.

24. What among the following is true about tables?

- A. A default value is given to a table
- B. A default value can be given to a column of a table during an INSERT statement
- C. Either of A or B
- D. None of the above

Answer: B. A default value can be specified for a column during the definition using the keyword DEFAULT.

25. Which of the following can be used with the DEFAULT option while creating a table?

- A. Strings
- B. Expressions
- C. SQL functions
- D. All of the above

Answer: D. The default value for a column can either be a literal or a derivative using SQL function.

26. Which of the following command is used to see the structure of a table?

- A. UPDATE
- B. SHOW
- C. DESCRIBE
- D. SPOOL

Answer: C. DESCRIBE is a SQL*Plus command to list the structure of the table.

27. What is the limit of CHECK constraints on a column?

- A. No limit
- B. 1

- C. 2
- D. 4

Answer: A. Oracle imposes no limit on the check constraints on a column.

28. Which of the following commands will drop table employees? (Consider the table structure as given)

```
SQL> DESC employees
Name                               Null?    Type
-----
EMPLOYEE_ID                       NOT NULL NUMBER(6)
FIRST_NAME                        VARCHAR2(20)
LAST_NAME                         NOT NULL VARCHAR2(25)
EMAIL                             NOT NULL VARCHAR2(25)
PHONE_NUMBER                      VARCHAR2(20)
HIRE_DATE                         NOT NULL DATE
JOB_ID                            NOT NULL VARCHAR2(10)
SALARY                            NUMBER(8,2)
COMMISSION_PCT                    NUMBER(2,2)
MANAGER_ID                        NUMBER(6)
DEPARTMENT_ID                     NUMBER(4)
```

- A. `DROP` employees
- B. `DROP TABLE` employees
- C. `TRUNCATE` employees
- D. None of the above

Answer: B.

29. What is true about a namespace?

- A. It is a group of object types
- B. Within a namespace, all the object names should be uniquely identified by schema and name
- C. The same type of objects in different namespaces can share the same name
- D. All of the above

Answer: D. A namespace defines a group of object types, within which all names must be uniquely identified-by schema and name. Objects in different namespaces can share the same name.

30. Which of the following object types share the same namespace?

- A. Synonyms
- B. Table
- C. Views
- D. All of the above

Answer: D.

31. What among the following is true about a table and an index?

- A. An index and a table can have the same name in a schema
- B. An index and a table within a schema cannot have the same name
- C. Neither of A nor B
- D. None of the above

Answer: A. As the index and constraints share the same namespace, a table and an index can have the same name.

32. What is true about creating a table?

- A. While creating a table, each column should be assigned a data type
- B. Data type assignment to columns is not mandatory
- C. A data type has to be assigned to a table and not to a column
- D. None of the above

Answer: A. Each column must possess behavioral attributes like data types and precision in order to build the structure of the table.

33. Suppose you create a table as shown below:

```
CREATE TABLE employees  
(emp_id NUMBER(4),  
last_name VARCHAR2 (20)  
);
```

How much space will Oracle allocate to the LAST_NAME column?

- A. If there are no rows, then Oracle will not allocate any space to the last_name column
- B. If rows are populated then Oracle will allocate unlimited space to the last_name column
- C. Neither of A nor B
- D. None of the above options

Answer: A.

34. What is the range of size that a VARCHAR2 data type can take?

- A. 1 byte to 2 byte
- B. 1 byte to 2000 bytes
- C. 1 byte to 4000 bytes
- D. None of the above

Answer: C. Until Oracle 11g Release 2, string data type VARCHAR2 can maximum contain 4000 bytes.

35. What is the range of size that a CHAR data type can take?

- A. 1 byte to 2 byte
- B. 1 byte to 2000 bytes
- C. 1 byte to 4000 bytes
- D. 1 byte to 3000 bytes

Answer: B. Until Oracle 11g Release 2, string data type CHAR can maximum contain 2000 bytes.

36. What is true about the CHAR data type?

- A. If the data is not the length of the column, then it will be replaced with NULL values
- B. If the data is not the length of the column, then it will be padded with spaces
- C. It is mandatory to have the data of the same size as mentioned in the CHAR size, else it throws an ORA error
- D. None of the above

Answer: B. CHAR provides a fixed length storage to a value while VARCHAR2 is flexible. If the data of length less than CHAR precision is inserted in a CHAR column, the remaining length will be padded to the column value.

37. Which of the following is a data type for variable length binary data?

- A. VARCHAR
- B. VARCHAR2
- C. RAW
- D. NVARCHAR2

Answer: C.

38. What is the precision allowed for the NUMBER data type?

- A. 1 to 20
- B. 1 to 4K
- C. 1 to 30
- D. 1 to 38 digits

Answer: D. Until Oracle 11g Release 2, primary data type NUMBER had the maximum precision of 38 digits.

39. What is the scale allowed for the NUMBER data type?

- A. 1 to 20
- B. -84 to 100
- C. -84 to 127
- D. None of the above

Answer: C.

40. Which of the following are the data types for date and time data?

- A. TIMESTAMP
- B. INTERVAL DAY TO SECOND
- C. TIMESTAMP WITH LOCAL TIMEZONE
- D. All of the above

Answer: D.

41. Which of the following data types are for large objects?

- A. CLOB
- B. BLOB
- C. RAW
- D. All of the above

Answer: A, B. LOB data types in SQL are BLOB, CLOB, and BFILE.

42. What will happen if the inserted value is of a smaller length as defined for a VARCHAR2 data type column?

- A. It will throw an ORA error
- B. It will get inserted successfully and the value will take up as much space as it needs.
- C. It will get inserted and the remaining space will be padded with spaces
- D. None of the above

Answer: B. VARCHAR2 contains variable length character data.

43. What does NUMBER (8, 2) in oracle mean?

- A. It means there are 8 digits in total, 6 digits before the decimal and 2 after the decimal
- B. It means there are 10 digits in total with 8 digits before the decimal and 2 after decimal
- C. It means there are 2 digits before the decimal and 8 after the decimal point
- D. None of the above

Answer: A. The p indicates precision, the total number of digits to the left and right of the decimal position, to a maximum of 38 digits; the s, or scale, indicates the number of positions to the right of the decimal. Example: NUMBER(7, 2) can store a numeric value up to 99999.99. If precision or scale isn't specified, the column defaults to a precision of 38 digits.

44. Which of the following queries will create a table with no rows in it?

- A. `CREATE TABLE emp AS SELECT 0 from dual;`
- B. `CREATE TABLE emp AS SELECT * from employees where 1=1;`
- C. `CREATE TABLE emp AS SELECT * from employees where 1=2;`
- D. `CREATE TABLE emp AS SELECT 0 from employees;`

Answer: C. The direct path operation CTAS (CREATE TABLE .. AS SELECT..) can be used to copy the structure of an existing table without copying the data.

45. Which of the following statements would add a column to a table already created?

- A. `ALTER TABLE table_name add column (job varchar2(20));`
- B. `ALTER TABLE table_name add job varchar2(20);`
- C. `ALTER TABLE table_name add (job varchar2(20));`
- D. `ALTER TABLE table_name add column (job);`

Answer: C. The ALTER TABLE command allows a user to add a new column to a table. The same rules for creating a column in a new table apply to adding a column to an existing table. The new column must be defined by a column name and datatype (and width, if applicable). A default value can also be assigned. The difference is that the new column is added at the end of the existing table—it will be the last column.

46. Which of the following statements will modify the data type of an already existing column?

- A. `ALTER TABLE table_name MODIFY (job varchar2(10));`
- B. `ALTER TABLE table_name MODIFY job varchar2(10);`

- C. `ALTER TABLE table_name MODIFY column (job varchar2(10));`
- D. `ALTER TABLE table_name MODIFY (job varchar2(10));`

Answer: A. The ALTER TABLE..MODIFY is used to modify column definition in a table. The admissible changes are increasing column precision, change datatype within a datatype family, or change the default value of the column.

47. Which of the following statements will remove a column from the table?

- A. `ALTER TABLE table_name DROP (job varchar2(10));`
- B. `ALTER TABLE table_name DROP COLUMN (job varchar2(10));`
- C. `ALTER TABLE table_name DROP COLUMN (job);`
- D. `ALTER TABLE table_name MODIFY (job varchar2(10));`

Answer: C. The ALTER TABLE..DROP COLUMN can be used to drop a column from the table.

48. Which of the following will rename the column emp_id to empno?

- A. `ALTER TABLE employees RENAME column emp_id to empno;`
- B. `ALTER TABLE employees RENAME emp_id to empno;`
- C. `ALTER TABLE employees RENAME column emp_id to empno;`
- D. None of the above;

Answer: A. The ALTER TABLE..RENAME can be used to rename an existing column in the table.

49. You need to mark the table employees as read only. Which of the following statements will you execute to get the required result?

- A. `ALTER TABLE employees set READ;`
- B. `ALTER TABLE employees READ ONLY;`
- C. `ALTER TABLE employees READ_ONLY;`
- D. `ALTER TABLE employees set READ ONLY;`

Answer: B. A table can be marked read only to make it passive against the DML and DDL statements. The read only feature was introduced in Oracle 11g.

50. What among the following is true about DDL statements?

- A. DDL commands become the part of ongoing transaction
- B. DDL commands are auto commit and end the ongoing active transaction

- C. If the DDL command fails, the current transaction is still committed
- D. If the DDL command fails, the current transaction is rolled back

Answer: B. DDL commands are auto commit only if they are successfully executed without errors. If DDL command fails, the ongoing transaction is still active in the session and not committed into the database.

51. What happens if there is an active transaction against a table on which a DDL is issued?

- A. The transaction rolls back
- B. The transaction is committed and terminated
- C. Both A and B
- D. None of the above

Answer: B.

52. Which of the following commands will remove unused columns in an SQL statement?

- A. `ALTER TABLE tablename DROP COLUMN column_name;`
- B. `ALTER TABLE tablename DROP unused columns;`
- C. `ALTER TABLE tablename set unused column;`
- D. `ALTER TABLE tablename DROP columns;`

Answer: C. The SET UNUSED command drops only the un-used columns from a table and is faster

53. What happens when a table which is marked Read Only is attempted for drop?

- A. It will throw an error
- B. It will no longer remain Read Only but cannot be dropped either
- C. It will be dropped without errors
- D. It will remain un-touched

Answer: C. The DROP command affects the data dictionary definition of the tables which are not Read Only and hence dropping is possible

Consider the following statement and answer the questions 54 and 55 that follow:

```
CREATE TABLE departments
(dept_id NUMBER (2),
dept_name VARCHAR2(14),
create_date DATE DEFAULT SYSDATE);
```

54. What will happen if the DEFAULT clause specification is removed from the statement?

- A. The script will throw error because DATE columns must be specified with a default value
- B. A system generated default value will be assigned to the column
- C. Table will be created with no default value for CREATE_DATE column
- D. None of the above

Answer: C.

55.What is true about the above statement?

- A. It will automatically commit the transaction in session
- B. It will create the table DEPARTMENTS in the schema
- C. It will set a default value for CREATE_DATE column
- D. None of the above

Answer: A, B, C.

56. Up to which limit can a BLOB data type column hold values?

- A. 1 KB
- B. 2 GB
- C. 4 GB
- D. 3 KB

Answer: C. As per Oracle 11g, the maximum size of data accommodated in a BLOB can be 4GB.

57.What is the difference between CLOB and BLOB data types? (Choose the most appropriate answer)

- A. CLOB is character data , BLOB is binary data
- B. CLOB is character data up to 2GB, BLOB is binary data up to 4 GB
- C. CLOB is character data up to 4 GB, BLOB is binary data up to 4 GB
- D. None of the above

Answer: C. CLOB is a character large object which is used to store character files like PDF, docs and text files while BLOB is a binary LOB used to store media files.

58.What among the following is a ROWID?

- A. It is a serial number given to a set of rows starting with 1
- B. It is an alphanumeric address given to a row in a table
- C. Both A and B

D. None of the above

Answer: B. It is a base-64 system representing the unique address of a row in its table.

59. What is the data type used for storing Binary data stored in an external file (up to 4 GB)?

- A. BLOB
- B. CLOB
- C. CFILE
- D. BFILE

Answer: D. BFILE is an external LOB type which is used to refer external media files. Internal LOB types are BLOB and CLOB which are used for binary large files and character large files stored in the database.

60. What is true about a table created with a sub-query?

- A. A VARCHAR2 data type column is not copied when a table is created using a sub-query
- B. A CLOB data type column is not copied when a table is created using a sub-query
- C. A LONG column is not copied when a table is created using a sub-query
- D. None of the above

Answer: C. The CTAS method to create a table doesn't copy the LONG column.

61. Which of the following data types cannot be used with a GROUP BY and an ORDER BY clause?

- A. CLOB
- B. VARCHAR2
- C. CHAR
- D. LONG

Answer: D. LONG data types cannot be used in GROUP BY and ORDER BY clause.

62. How many LONG columns can a table contain?

- A. None
- B. Maximum 2
- C. Minimum 2
- D. Only one

Answer: D. A table can contain maximum one column of LONG type.

63. Which of the following data types cannot be constrained in SQL?

- A. VARCHAR2
- B. LONG
- C. CHAR
- D. DATE

Answer: B. Constraints cannot be created on LONG type columns.

64. Which of the following data types can you use if you want a date with fractional seconds?

- A. DATE
- B. VARCHAR2
- C. TIMESTAMP
- D. None of the above

Answer: C. The TIMESTAMP data type provides additional precised information of date values. It provides fractional seconds and time zone information.

65. You need to store an interval of days, hours, minutes and seconds in a column. Which of the data type would help?

- A. TIMESTAMP
- B. INTERVAL YEAR TO MONTH
- C. INTERVAL DAY TO SECOND
- D. None of the above

Answer: C.

66. You need to find how many employees were hired in June, 2011 and June, 2012. Which of the following data types will help?

- A. INTERVAL DAY TO SECOND
- B. TIMESTAMP
- C. DATE
- D. INTERVAL YEAR TO MONTH

Answer: D.

67. What is true about constraints?

- A. They enforce rules at the row level
- B. They enforce rules at the table level
- C. It is mandatory to have constraints created while creating a table
- D. None of the above

Answer: B. A constraint is a rule applied to data being added to a table. It represents business rules, policies, or procedures. Data violating the constraint isn't added to the table. A constraint can be included during table creation as part of the CREATE TABLE command or added to an existing table with the ALTER TABLE command. A constraint based on composite columns (more than one column) must be created by using the table-level approach.

68. How are constraints helpful?

- A. They limit the storage capacity of a table and hence save DB space
- B. They prevent the modification of a table
- C. They prevent deletion of a table if there are dependencies
- D. None of the above

Answer: C. A constraint is a rule applied to data being added to a table. It represents business rules, policies, or procedures. Data violating the constraint isn't added to the table.

69. A RAW data type column can store variable-length binary strings up to what value?

- A. 10 GB
- B. 1 TB
- C. 2 GB
- D. 4 GB

Answer: C.

70. Which of the following are valid constraints in Oracle?

- A. INDEX
- B. GENERAL
- C. UNIQUE
- D. PRIMARY KEY

Answer: C, D. A NOT NULL constraint can be created only with the column-level approach. A PRIMARY KEY constraint doesn't allow duplicate or NULL values in the designated column. Only one PRIMARY KEY constraint is allowed in a table. A FOREIGN KEY constraint requires that the column entry match a referenced column entry in the table or be NULL. A UNIQUE constraint is similar to a PRIMARY KEY constraint, except it allows storing NULL values in the specified column. A CHECK constraint ensures that data meets a given condition before it's added to the table.

71. Which of the below DML operations consider constraints on a column?

- A. INSERT

- B. UNION
- C. DELETE
- D. UPDATE

Answer: A, C, D. All the DML operations obey constraints on the columns of the table.

72. When can a constraint be created?

- A. While creating a table
- B. After creating a table
- C. Both A and B
- D. None of the above

Answer: C. A constraint can be included during table creation as part of the CREATE TABLE command or added to an existing table with the ALTER TABLE command.

73 Where are constraints stored?

- A. In the SGA
- B. In a table
- C. In data dictionary
- D. None of the above

Answer: C.

74. You create a constraint but do not name it. What will be the default name given to the constraint?

- A. SYS_Cn
- B. SYS_constraint
- C. SYS_Const
- D. SYS_C0

Answer: A. By default, Oracle gives a generic name to the constraints SYS_Cn, where the n is an integer to keep the name of a constraint unique.

75. What is the functional difference between a column-level constraint and a table-level constraint?

- A. Column-level constraint applies to all the columns of a table
- B. Table-level constraint applies to all the columns of a table
- C. They both are functionally the same, only the syntax is different
- D. None of the above

Answer: C. Functionally, the table level constraints and column level constraints work similar. Composite constraints can be defined at table level only.

76. What is true about column-level constraints?

- A. They can be created before the creation of a table
- B. They can be created before the defining of a column
- C. They are included when the column is defined
- D. None of the above

Answer: C. Column level constraints are defined along with the column specification.

77. What is true about NOT NULL constraints in SQL?

- A. They should be defined at the table level
- B. They should be defined at the column level
- C. They should be defined only on one column
- D. They should be defined only on one row

Answer: B. A NOT NULL constraint can be created only with the column-level approach.

Consider the following statement and answer the questions 78 and 79 that follow:

```
CREATE TABLE employees (  
  emp_id NUMBER (6) CONSTRAINT emp_emp_id_PK PRIMARY KEY,  
  first_name VARCHAR2(20),  
  last_name VARCHAR2(20),  
  hire_date DATE  
);
```

78. Which type of constraint is created in the above statement?

- A. Column level constraint
- B. Table level constraint
- C. Named constraint
- D. Specification constraint

Answer: A. A column level constraint is created along with the column definition.

79. What modification can be made to the above statement to give it a table level constraint?

- A. CONSTRAINT emp_emp_id_PK PRIMARY KEY

- B. CONSTRAINT emp_emp_id_PK PRIMARY KEY (EMP_ID)
- C. CONSTRAINT emp_emp_id_PK EMP_ID PRIMARY KEY
- D. CONSTRAINT PRIMARY KEY emp_emp_id_PK

Answer: B.

80. What is true about PRIMARY KEY constraint?

- A. It applies a NOT NULL constraint implicitly to the column on which it is defined
- B. It applies a UNIQUE KEY constraint implicitly to the column on which it is defined
- C. It applies a CHECK constraint implicitly to the column on which it is defined
- D. It applies a DEFAULT constraint implicitly to the column on which it is defined

Answer: A. A PRIMARY KEY constraint doesn't allow duplicate or NULL values in the designated column. Only one PRIMARY KEY constraint is allowed in a table.

81. What among the following is true regarding a UNIQUE KEY constraint?

- A. UNIQUE KEY constraint and PRIMARY KEY constraint are the same
- B. UNIQUE KEY constraint allows NULL values if there is no NOT NULL defined on the column(s)
- C. We can have two identical rows when a UNIQUE KEY constraint is defined on a column
- D. None of the above

Answer: B. A UNIQUE constraint is similar to a PRIMARY KEY constraint, except it allows storing NULL values in the specified column.

Consider the following statement and answer the questions 82 and 83 that follow:

```
CREATE TABLE employees (  
  emp_id NUMBER (6)  
  first_name VARCHAR2(20),  
  last_name VARCHAR2(20),  
  job VARCHAR2(20),  
  hire_date DATE  
  CONSTRAINT emp_job_UK UNIQUE (job));
```

82. Which of the below statements interpret the above CREATE TABLE script?

- A. This table cannot have two identical Job IDs
- B. This table can have two or more identical Job IDs
- C. This table can have NULL values in the JOB column

D. None of the above

Answer: A, C. A UNIQUE constraint on the JOB column will restrict duplicate value but allows nulls.

83. If the constraint emp_job_UK is modified as emp_job_PK PRIMARY KEY (job), what will be outcome?

- A. This change can happen only if there's no NULL value in the JOB column
- B. This change can happen without any restrictions
- C. This change will change the values of the column JOB
- D. None of the above

Answer: A.

84. What is true about the UNIQUE key constraint?

- A. A unique key index is implicitly created when a UNIQUE constraint is defined on a column
- B. A PRIMARY KEY constraint is implicitly created when a UNIQUE constraint is defined on a column
- C. A NOT NULL constraint is implicitly created when a UNIQUE constraint is defined on a column
- D. None of the above

Answer: A. When a unique constraint is imposed on a table, Oracle internally creates a unique key index on the column to restrict the duplication of values.

85. Which of the following is true about indexes?

- A. If an UPDATE statement is executed on a table, the indexes need to be manually updated as well
- B. If a DELETE statement is executed on a table, the indexes need to manually deleted as well
- C. When a table is dropped, the indexes are automatically dropped
- D. If an UPDATE statement is executed on a table, the corresponding indexes are updated as well.

Answer: C, D.

86. Which of the following CREATE TABLE statements is valid?

- A. `CREATE TABLE EMPLOYEES`
- B. `(emp_id NUMBER (2) PRIMARY KEY,`
- C. `first_name VARCHAR(20),`

D. last_name VARCHAR(20),
 E. hire_date DATE NOT NULL);
 F. CREATE TABLE EMPLOYEES
 G. (emp_id NUMBER (2) PRIMARY KEY NOT NULL,
 H. first_name VARCHAR(20),
 I. last_name VARCHAR(20),
 J. hire_date DATE NOT NULL PRIMARY KEY);
 K. CREATE TABLE EMPLOYEES
 L. (emp_id NUMBER (2) PRIMARY KEY,
 M. first_name VARCHAR(20),
 N. last_name VARCHAR(20),
 O. hire_date DATE NOT NULL UNIQUE);
 P. CREATE TABLE EMPLOYEES
 Q. (emp_id NUMBER (2),
 R. first_name VARCHAR(20),
 S. last_name VARCHAR(20),
 T. hire_date DATE NOT NULL,
 U. CONSTRAINT emp_emp_id_PK PRIMARY KEY (emp_id));

Answer: A, C, D. All the CREATE TABLE scripts are valid.

87. How many PRIMARY KEY constraints can a table have?

- A. 0
- B. Unlimited
- C. 2
- D. 1

Answer: D. A table can have one and only one primary key.

88. You want to put a CHECK constraint on the EMP_ID such that it should be equal to the current value of a Sequence through which it is getting its values. Which of the following statements will help you achieve this?

- A. Emp_id NUMBER (10) CONSTRAINT emp_emp_id_chk CHECK (emp_id = EMPNO.CURRVAL);
- B. Emp_id NUMBER (10) CONSTRAINT emp_emp_id_chk CHECK (emp_id = EMPNO.NEXTVAL);
- C. Emp_id NUMBER (10) CONSTRAINT emp_emp_id_chk CHECK (EMPNO.CURRVAL);
- D. None of the above

Answer: D. You cannot use CURRVAL, NEXTVAL, LEVEL and ROWNUM pseudo columns in the CHECK constraint

89. Which of the following commands will help in converting the foreign key values to NULL?

- A. ON DELETE CASCADE
- B. ON DELETE SET NULL
- C. CASCADE
- D. REFERENCES

Answer: B.

90. You need to add a constraint to the EMPLOYEES table which restricts the addition of those employees who have salaries less than 10000. Which of the following commands will give you the required results?

- A. `ALTER TABLE employees ADD CONSTRAINT emp_emp_sal_CHECK CHECK (salary >= 10000);`
- B. `ALTER TABLE employees ADD CHECK CONSTRAINT emp_emp_sal_CHECK (salary > 10000);`
- C. `ALTER TABLE employees ADD CONSTRAINT CHECK emp_emp_sal_CHECK (salary = 10000);`
- D. `ALTER TABLE employees ADD CONSTRAINT emp_emp_sal_CHECK (salary < 10000);`

Answer: A.

91. You need to add a constraint to the EMPLOYEES table which imposes a restriction that the HIRE_DATE for all the employees should be equal to SYSDATE-7. Which of the following statements will give you the required results?

- A. `ALTER TABLE employees ADD CHECK CONSTRAINT emp_emp_sal_CHECK (to_char(hire_date, 'DD-MON-YY') = SYSDATE - 7);`
- B. `ALTER TABLE employees ADD CONSTRAINT CHECK emp_emp_sal_CHECK (to_char(hire_date, 'DD-MON-YY') = SYSDATE - 7);`
- C. `ALTER TABLE employees ADD emp_emp_sal_CHECK CHECK (to_char(hire_date, 'DD-MON-YY') = SYSDATE - 7);`
- D. None of the above

Answer: D. You cannot use SYSDATE, UID, USER and USERENV functions in the CHECK constraint.

Consider the following query and answer the questions 92 to 94 that follow:


```
CREATE TABLE EMPLOYEES
(emp_id NUMBER (2),
first_name VARCHAR(20),
last_name VARCHAR(20),
dept_id NUMBER (10),
hire_date DATE DEFAULT SYSDATE
CONSTRAINT emp_emp_id_PK PRIMARY KEY (emp_id, hire_date)
CONSTRAINT emp_dept_FK FOREIGN KEY (dept_id)
REFERENCES departments (dept_id)
);
```

92. Which of the below statements interpret the CREATE TABLE script?

- A. A FOREIGN KEY constraint is defined at the table level on the column DEPT_ID
- B. The FOREIGN KEY constraint defined references the DEPT_ID from the DEPARTMENTS table
- C. Both A and B
- D. None of the above

Answer: C. The keywords FOREIGN KEY and REFERENCES are used when we define a FOREIGN KEY constraint for referential integrity.

93. You need to delete all the dependent rows in DEPARTMENTS table when you delete the EMPLOYEES table. Which of the following command will solve the purpose? (Consider the table structures as given)

```
SQL> DESC employees
```

Name	Null?	Type
EMPLOYEE_ID	NOT NULL	NUMBER(6)
FIRST_NAME		VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(25)
EMAIL	NOT NULL	VARCHAR2(25)
PHONE_NUMBER		VARCHAR2(20)
HIRE_DATE	NOT NULL	DATE
JOB_ID	NOT NULL	VARCHAR2(10)
SALARY		NUMBER(8,2)
COMMISSION_PCT		NUMBER(2,2)
MANAGER_ID		NUMBER(6)

```

DEPARTMENT_ID          NUMBER(4)
SQL> DESC departments
Name                    Null?    Type
-----
DEPARTMENT_ID          NOT NULL NUMBER(4)
DEPARTMENT_NAME        NOT NULL VARCHAR2(30)
MANAGER_ID             NUMBER(6)
LOCATION_ID             NUMBER(4)

```

- A. ON DELETE SET NULL
- B. ON DELETE CASCADE
- C. DELETE ALL
- D. FOR UPDATE

Answer: B. If ON DELETE CASCADE is included in the constraint definition and a record is deleted from the parent table, any corresponding records in the child table are also deleted automatically.

94. The EMPLOYEES table as shown below, has 5 employees who work in department 10. An executive from admin department issues the below query.

```

DELETE FROM departments
WHERE dept_id = 10;

```

What will be the outcome of this query? (Assume the table structures as shown)

```

SQL> DESC employees
Name                    Null?    Type
-----
EMPLOYEE_ID          NOT NULL NUMBER(6)
FIRST_NAME           VARCHAR2(20)
LAST_NAME            NOT NULL VARCHAR2(25)
EMAIL                NOT NULL VARCHAR2(25)
PHONE_NUMBER         VARCHAR2(20)
HIRE_DATE            NOT NULL DATE
JOB_ID               NOT NULL VARCHAR2(10)
SALARY               NUMBER(8,2)
COMMISSION_PCT       NUMBER(2,2)
MANAGER_ID           NUMBER(6)
DEPARTMENT_ID        NUMBER(4)

```

```
SQL> DESC departments
```

Name	Null?	Type
DEPARTMENT_ID	NOT NULL	NUMBER(4)
DEPARTMENT_NAME	NOT NULL	VARCHAR2(30)
MANAGER_ID		NUMBER(6)
LOCATION_ID		NUMBER(4)

- A. Integrity constraint error
- B. Successful execution
- C. Neither of A nor B
- D. None of the above

Answer: A. The DEPT_ID from DEPARTMENTS is the foreign key in the table EMPLOYEES and there are employees in department 10 ,hence a value cannot be deleted from the parent table unless the child record is found.