|  |
| --- |
| True / False |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. A database language enables the user to perform complex queries designed to transform the raw data into useful information.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. SQL is considered difficult to learn; its command set has a vocabulary of more than 300 words.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. The ANSI SQL standards are also accepted by the ISO.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. The COMMIT command does not permanently save all changes. In order to do that, you must use SAVE.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. All SQL commands must be issued on a single line.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-2 Basic SELECT Queries | | *LEARNING OBJECTIVES:* | 07.02 - Join multiple tables in a single SQL query | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. Although SQL commands can be grouped together on a single line, complex command sequences are best shown on separate lines, with space between the SQL command and the command’s components.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-2 Basic SELECT Queries | | *LEARNING OBJECTIVES:* | 07.02 - Join multiple tables in a single SQL query | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7. An alias cannot be used when a table is required to be joined to itself in a recursive query.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-4h Recursive Joins | | *LEARNING OBJECTIVES:* | 07.02 - Join multiple tables in a single SQL query | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8. Oracle users can use the Access QBE (query by example) query generator.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6a Selecting Rows with Conditional Restrictions | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9. You can select partial table contents by naming the desired fields and by placing restrictions on the rows to be included in the output.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6a Selecting Rows with Conditional Restrictions | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. Comparison operators cannot be used to place restrictions on character-based attributes.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6b Using Comparison Operators on Character Attributes | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11. String comparisons are made from left to right.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6b Using Comparison Operators on Character Attributes | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12. Date procedures are often more software-specific than other SQL procedures.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6c Using Comparison Operators on Dates | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13. SQL allows the use of logical restrictions on its inquiries such as OR, AND, and NOT.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6d Logical Operators: AND, OR, and NOT | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14. You cannot insert a row containing a null attribute value using SQL.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15. ANSI-standard SQL allows the use of special operators in conjunction with the WHERE clause.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16. The conditional LIKE must be used in conjunction with wildcard characters.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. Most SQL implementations yield case-insensitive searches.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18. Some RDBMSs, such as Microsoft Access, automatically make the necessary conversions to eliminate case sensitivity.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19. The COUNT function is designed to tally the number of non-null "values" of an attribute, and is often used in conjunction with the DISTINCT clause.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-7a Aggregate Functions | | *LEARNING OBJECTIVES:* | 07.04 - Aggregate data across groups of rows | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20. Numeric functions take one numeric parameter and return one value.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-9b Numeric Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |
| --- |
| Multiple Choice |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21. The SQL data manipulation command HAVING:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | restricts the selection of rows based on a conditional expression. | b. | restricts the selection of grouped rows based on a condition. | |  | c. | modifies an attribute’s values in one or more table’s rows. | d. | groups the selected rows based on one or more attributes. |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. The SQL command that allows a user to permanently save data changes is \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | INSERT | b. | SELECT | |  | c. | COMMIT | d. | UPDATE |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23. The \_\_\_\_\_ command defines a default value for a column when no value is given.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | CHECK | b. | UNIQUE | |  | c. | NOT NULL | d. | DEFAULT |  |  |  | | --- | --- | | *ANSWER:* | d | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24. The  \_\_\_\_\_ command restricts the selection of grouped rows based on a condition.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | DISPLAY | b. | HAVING | |  | c. | FROM | d. | CONVERT |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25. A(n) \_\_\_\_\_ query specifies which data should be retrieved and how it should be filtered, aggregated, and displayed.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | INSERT | b. | SELECT | |  | c. | COMMIT | d. | UPDATE |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1b SQL Queries | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 26. A(n) \_\_\_\_\_ is an alternate name given to a column or table in any SQL statement.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | alias | b. | data type | |  | c. | stored function | d. | trigger |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-3a Using Column Aliases | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 27. According to the rules of precedence, which of the following computations should be completed first?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Additions and subtractions | b. | Multiplications and divisions | |  | c. | Operations within parentheses | d. | Power operations |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-3c Arithmetic Operators: The Rule of Precedence | | *LEARNING OBJECTIVES:* | 07.02 - Join multiple tables in a single SQL query | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28. Which query is used to list a unique value for V\_CODE, where the list will produce only a list of those values that are different from one another?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | SELECT ONLY V\_CODE  FROM PRODUCT; | b. | SELECT UNIQUE V\_CODE  FROM PRODUCT; | |  | c. | SELECT DIFFERENT V\_CODE  FROM PRODUCT; | d. | SELECT DISTINCT V\_CODE  FROM PRODUCT; |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-3e Listing Unique Values | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 29. When using a(n) \_\_\_\_\_ join, only rows from the tables that match on a common value are returned.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | full | b. | outer | |  | c. | inner | d. | set |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-4 FROM Clause Options | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 30. A(n) \_\_\_\_\_ join will select only the rows with matching values in the common attribute(s).   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | natural | b. | outer | |  | c. | full | d. | cross |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-4a Natural Join | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31. If a designer wishes to create an inner join, but the two tables do not have a commonly named attribute, he can use a(n) \_\_\_\_\_ clause.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | OF | b. | USING | |  | c. | HAS | d. | JOIN ON |  |  |  | | --- | --- | | *ANSWER:* | d | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-4c JOIN ON Syntax | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 32. A(n) \_\_\_\_\_ join returns not only the rows matching the join condition (that is, rows with matching values in the common columns) but also the rows with unmatched values.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | outer | b. | inner | |  | c. | equi- | d. | cross |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-4e Outer Joins | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 33. The syntax for a left outer join is \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | SELECT     column-list  FROM        table1 OUTER JOIN table2 LEFT  WHERE     join-condition | b. | SELECT    column-list  FROM       table1 LEFT [OUTER] JOIN table2  ON             join-condition | |  | c. | SELECT     column-list  WHERE     LEFT table1 = table | d. | SELECT    column-list  FROM       table1 LEFT table2 [JOIN]  WHERE     join-condition |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-4e Outer Joins | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 34. A(n) \_\_\_\_\_ join performs a relational product (also known as the Cartesian product) of two tables.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | full | b. | cross | |  | c. | natural | d. | equi- |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-4f Cross Join | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 35. How many rows would be returned from a cross join of tables A and B, if A contains 8 rows and B contains 18?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | 8 | b. | 18 | |  | c. | 26 | d. | 144 |  |  |  | | --- | --- | | *ANSWER:* | d | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-4f Cross Join | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 36. Which comparison operator indicates a value is not equal?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | < | b. | <= | |  | c. | >= | d. | <> |  |  |  | | --- | --- | | *ANSWER:* | d | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-6a Selecting Rows with Conditional Restrictions | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 37. What type of command does this SQL statement use?  SELECT          P\_CODE, P\_DESCRIPT, P\_PRICE\_V\_NAME  FROM             PRODUCT, VENDOR  WHERE          PRODUCT.V\_CODE=VENDOR. V\_CODE   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | set operator | b. | natural join | |  | c. | "old-style" join | d. | procedural statement |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-6e Old-Style Joins | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 38. The special operator used to check whether an attribute value is within a range of values is \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | BETWEEN | b. | NULL | |  | c. | LIKE | d. | IN |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 39. The special operator used to check whether an attribute value matches a given string pattern is \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | BETWEEN | b. | IS NULL | |  | c. | LIKE | d. | IN |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40. The SQL aggregate function that gives the number of rows containing non-null values for a given column is \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | COUNT | b. | MIN | |  | c. | MAX | d. | SUM |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-7a Aggregate Functions | | *LEARNING OBJECTIVES:* | 07.04 - Aggregate data across groups of rows | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 41. A(n) \_\_\_\_\_ is a query that is embedded (or nested) inside another query.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | alias | b. | operator | |  | c. | subquery | d. | view |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-8 Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 42. In subquery terminology, the first query in the SQL statement is known as the \_\_\_\_\_ query.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | outer | b. | left | |  | c. | inner | d. | base |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-8 Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 43. The special operator used to check whether a subquery returns any rows is \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | BETWEEN | b. | EXISTS | |  | c. | LIKE | d. | IN |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-8g Correlated Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44. Which is a feature of a correlated subquery?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | The inner subquery executes first. | b. | The outer subquery initiates the process of execution in a subquery. | |  | c. | The inner subquery initiates the process of execution in a subquery. | d. | The outer subquery executes independent of the inner subquery. |  |  |  | | --- | --- | | *ANSWER:* | b | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-8g Correlated Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 45. The \_\_\_\_\_ function returns the current system date in MS Access.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | TO\_DATE() | b. | SYSDATE() | |  | c. | DATE() | d. | TODAY() |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9a Date and Time Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 46. When using the Oracle TO\_DATE function, the code \_\_\_\_\_ represents a three-letter month name.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | MON | b. | MM3 | |  | c. | MONTH | d. | MM |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9a Date and Time Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 47. \_\_\_\_\_ is a string function that returns the number of characters in a string value.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | LENGTH | b. | SUBSTRING | |  | c. | CONCAT | d. | UCASE |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9c String Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 48. The Oracle \_\_\_\_\_ function compares an attribute or expression with a series of values and returns an associated value or a default value if no match is found.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | NVL | b. | TO\_CHAR | |  | c. | DECODE | d. | CONVERT |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9c String Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 49. In Oracle, the \_\_\_\_\_ function converts a date to a character string.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | CONVERT() | b. | TO\_DATE | |  | c. | TO\_CHAR() | d. | TO\_STRING() |  |  |  | | --- | --- | | *ANSWER:* | c | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9d Conversion Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50. \_\_\_\_\_ is a relational set operator.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | EXCEPT | b. | PLUS | |  | c. | ALL | d. | EXISTS |  |  |  | | --- | --- | | *ANSWER:* | a | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-10 Relational Set Operators | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |
| --- |
| Completion |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 51. The basic SQL vocabulary has fewer than \_\_\_\_\_words.   |  |  | | --- | --- | | *ANSWER:* | 100  one hundred  a hundred | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 52. The \_\_\_\_\_ specification is used to avoid having duplicated values in a column.   |  |  | | --- | --- | | *ANSWER:* | UNIQUE | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 53. In the SQL environment, the word \_\_\_\_\_ covers both questions and actions.   |  |  | | --- | --- | | *ANSWER:* | query | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-1b SQL Queries | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 54. A(n) \_\_\_\_\_ character is a symbol that can be used as a general substitute for other characters or commands.   |  |  | | --- | --- | | *ANSWER:* | wildcard  wild card | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-3 SELECT Statement Options | | *LEARNING OBJECTIVES:* | 07.02 - Join multiple tables in a single SQL query | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 55. The \_\_\_\_\_ condition is generally composed of an equality comparison between the foreign key and the primary key of related tables.   |  |  | | --- | --- | | *ANSWER:* | join | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-4 FROM Clause Options | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 56. A(n) \_\_\_\_\_ order sequence is a multilevel ordered sequence that can be created easily by listing several attributes, separated by commas, after the ORDER BY clause.   |  |  | | --- | --- | | *ANSWER:* | cascading | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-5 ORDER BY Clause Options | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 57. An alias is especially useful when a table must be joined to itself in a(n) \_\_\_\_\_ query.   |  |  | | --- | --- | | *ANSWER:* | recursive | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-4h Recursive Joins | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 58. The \_\_\_\_\_ command, coupled with appropriate search conditions, is an incredibly powerful tool that enables a user to transform data into information.   |  |  | | --- | --- | | *ANSWER:* | SELECT | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6 WHERE Clause Options | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 59. A specialty field in mathematics, known as \_\_\_\_\_ algebra, is dedicated to the use of logical operators.   |  |  | | --- | --- | | *ANSWER:* | Boolean | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6d Logical Operators: AND, OR, and NOT | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 60. In SQL, all \_\_\_\_\_ expressions evaluate to true or false.   |  |  | | --- | --- | | *ANSWER:* | conditional | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-6d Logical Operators: AND, OR, and NOT | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 61. Rows can be grouped into smaller collections quickly and easily using the \_\_\_\_\_ clause within the SELECT statement.   |  |  | | --- | --- | | *ANSWER:* | GROUP BY | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-7b Grouping Data | | *LEARNING OBJECTIVES:* | 07.04 - Aggregate data across groups of rows | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 62. The \_\_\_\_\_ clause of the GROUP BY statement operates very much like the WHERE clause in the SELECT statement.   |  |  | | --- | --- | | *ANSWER:* | HAVING | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-7c HAVING Clause | | *LEARNING OBJECTIVES:* | 07.04 - Aggregate data across groups of rows | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 63. A(n) \_\_\_\_\_, also known as a nested query or an inner query, is a query that is embedded (or nested) inside another query.   |  |  | | --- | --- | | *ANSWER:* | subquery | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-8 Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 64. DATE() and SYSDATE are special functions that return today’s date in MS Access and \_\_\_\_\_, respectively.   |  |  | | --- | --- | | *ANSWER:* | Oracle | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9a Date and Time Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 65. \_\_\_\_\_ functions allow you to take a value of a given data type and convert it to the equivalent value in another data type.   |  |  | | --- | --- | | *ANSWER:* | Conversion | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-9d Conversion Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 66. “\_\_\_\_\_” means that the names of the relation attributes must be the same and their data types must be alike.   |  |  | | --- | --- | | *ANSWER:* | Union-compatible | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-10 Relational Set Operators | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 67. The \_\_\_\_\_ statement in SQL combines rows from two queries and returns only the rows that appear in the first set but not in the second.   |  |  | | --- | --- | | *ANSWER:* | EXCEPT | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-10 Relational Set Operators | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 68. The \_\_\_\_\_ operator could be used in place of INTERSECT if the DBMS does not support it.   |  |  | | --- | --- | | *ANSWER:* | IN | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-10e Syntax Alternatives | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 69. The \_\_\_\_\_ operator could be used in place of EXCEPT (MINUS) if the DBMS does not support it.   |  |  | | --- | --- | | *ANSWER:* | NOT IN | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-10 Relational Set Operators | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 70. The syntax of the EXCEPT statement in Oracle is \_\_\_\_\_.   |  |  | | --- | --- | | *ANSWER:* | *query* EXCEPT *query* | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | 7-10d Except (Minus) | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |

|  |
| --- |
| Essay |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 71. Explain the SQL function categories.   |  |  | | --- | --- | | *ANSWER:* | * SQL functions fit into several broad categories:   ​   * 1. Data definition language (DDL): it includes commands to create database objects such as tables, indexes, and views, as well as commands to define access rights to those databases objects.   2. Data manipulation language (DML): it includes commands to insert, update, delete, and retrieve data within the database tables.   3. Transaction control language (TCL): the DML commands in SQL are executed within the context of a transaction, which is a logical unit of work composed of one or more SQL statements, as defined by business rules (see Chapter 10, Transaction Management and Concurrency Control). SQL provides commands to control the processing of these statements an indivisible unit of work. These will be discussed in Chapter 8, after you learn about the DML commands that compose a transaction.   4. Data control language (DCL): data control commands are used to control access to data objects, such as giving a one user permission to only view the PRODUCT table, and giving another use permission to change the data in the PRODUCT table. | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-1 Introduction to SQL | | *LEARNING OBJECTIVES:* | 07.01 - Retrieve specified columns of data from a database | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 72. What are the wildcard characters that are used with the LIKE command? Provide one or more examples of each.   |  |  | | --- | --- | | *ANSWER:* | The LIKE special operator is used in conjunction with wildcards to find patterns within string attributes. Standard SQL allows a user to use the percentage sign (%) and underscore (\_) wildcard characters to make matches when the entire string is not known:  % means any and all *following* or *preceding* characters are eligible.  ​  For example:  'J%' includes Johnson, Jones, Jernigan, July, and J-231Q.  'Jo%' includes Johnson and Jones.  '%n' includes Johnson and Jernigan.  \_ means any *one* character may be substituted for the underscore.  ​  For example:  '\_23-456-6789' includes 123-456-6789, 223-456-6789, and 323-456-6789.  '\_23-\_56-678\_' includes 123-156-6781, 123-256-6782, and 823-956-6788.  '\_o\_es' includes Jones, Cones, Cokes, totes, and roles. | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-6f Special Operators | | *LEARNING OBJECTIVES:* | 07.03 - Restrict data retrievals to rows that match complex criteria | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 73. What is a subquery? What is always executed first?   |  |  | | --- | --- | | *ANSWER:* | A subquery, also known as a nested query or an inner query, is a query that is embedded (or nested) inside another query. The inner query is always executed first by the RDBMS. | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-8 Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 74. What are the four different types of results that can be returned from a subquery?   |  |  | | --- | --- | | *ANSWER:* | A subquery can return one or more values.  ​  One single value (one column and one row):  This subquery is used anywhere a single value is expected, as in the right side of a comparison expression. An example is the preceding UPDATE subquery, in which an average price is assigned to the product’s price. When a value is assigned to an attribute, a single value is assigned and not a list of them. Therefore, the subquery must return only one value (one column, one row). If the query returns multiple values, the DBMS generates an error.  ​  A list of values (one column and multiple rows):  This type of subquery is used anywhere a list of values is expected, such as when using the IN clause—for example, when comparing the vendor code to a list of vendors. Again, in this case, there is only one column of data with multiple value instances. This type of subquery is used frequently in combination with the IN operator in a WHERE conditional expression.  ​  A virtual table (multicolumn, multirow set of values):  This type of subquery can be used anywhere a table is expected, such as when using the FROM clause.  ​  The fourth result that a subquery can return is no value at all. It is called NULL.  ​ | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-8 Subqueries | | *LEARNING OBJECTIVES:* | 07.05 - Create subqueries to preprocess data for inclusion in other queries | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 75. Describe the important features and applications of SQL functions.   |  |  | | --- | --- | | *ANSWER:* | SQL functions are very useful tools. Functions always use a numerical, date, or string value. The value may be part of the command itself (a constant or literal) or it may be an attribute located in a table. Therefore, a function may appear anywhere in a SQL statement where a value or an attribute can be used. There are many types of SQL functions, such as arithmetic, trigonometric, string, date, and time functions.  ​  These functions are useful when all employees need to be ordered by year of birth, or when a marketing department wants to generate a list of all customers ordered by zip code and the first three digits of their telephone numbers. In both of these cases, data elements that are not present as such in the database will be required; instead, an SQL function that can be derived from an existing attribute is required. | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | 7-9 SQL Functions | | *LEARNING OBJECTIVES:* | 07.06 - Identify and use a variety of SQL functions for string, numeric, and date manipulation | |