Test Bank for Concepts of Database Management 8th Edition by Pratt Last ISBN 1285427106 9781285427102

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Solution Manual

Test Bank

Chapter 2: The Relational Model 1: Introduction, OBE, and

Relational Algebra True / False

1. A relational database handles entities, attributes, and relationships by storing each entity in its own table.
    a. True
    b. False

ANSWER: True

POINTS: 1

REFERENCES: 31

2. The attributes of an entity become the fields or columns in a table.
    a. True
    b. False

ANSWER: True

POINTS: 1

REFERENCES: 31

3. Each column in a table should have a unique name, and entries in each column should all "match" this column name.
    a. True
    b. False

ANSWER: True

POINTS: 1

REFERENCES: 31

4. In a relation, the order of the columns is important.
    a. True

b. False

ANSWER: False

POINTS: 1

REFERENCES: 31

5. In a relation, the order of rows is important.

    a. True

    b. False

ANSWER: False

POINTS: 1

REFERENCES: 31

6. A relational database is a collection of relations.

    a. True

    b. False

ANSWER: True

POINTS: 1

REFERENCES: 31

7. An unnormalized relation is a table that has more than one row.

    a. True

b. False

ANSWER: False

POINTS: 1

REFERENCES: 31

8. A column whose value uniquely identifies a given row in the table is the secondary key.

a. True

b. False

ANSWER: False

POINTS: 1

REFERENCES: 32

9. A query is a question represented in a way that the DBMS can recognize and process.

a. True

b. False

ANSWER: True

POINTS: 1

REFERENCES: 32

10. QBE is a visual approach to writing queries.

a. True

b. False

ANSWER: True

POINTS: 1

REFERENCES: 32

11. Access automatically adds double quotation marks around values in the design grid that are formatted as Short Text fields when you run the query or move the insertion point to another cell in the design grid.

a. True

b. False

ANSWER: True

POINTS: 1

REFERENCES: 37

12. The comparison operators are +, *, %, and /.

a. True

b. False

ANSWER: False

POINTS: 1

REFERENCES: 37

13. The comparison operators are also known as relational operators.

a. True

b. False

ANSWER: True

POINTS: 1
REFERENCES: 37

14. In an AND criterion, the overall criterion is true if either of the individual criteria is true.
    a. True
    b. False
ANSWER: False
POINTS: 1
REFERENCES: 37

15. The concept of grouping means that statistics will be calculated for individual records.
    a. True
    b. False
ANSWER: False
POINTS: 1
REFERENCES: 44

Multiple Choice

16. A relation is a(n)_____.
    a. attribute
    b. column
    c. field
    d. table
ANSWER: d
POINTS: 1
REFERENCES: 31

17. Based on the statement below, which of the following is the primary key?
Rep (RepNum, LastName, FirstName, Street, City, State, PostalCode Commission, Rate)
    a. RepNum
    b. LastName
    c. FirstName
    d. State
*ANSWER:*a
*POINTS:*1
REFERENCES: 32

18. When duplicate column names exist in a database and you need to indicate the column to which you are referring,
_____.
    a. do not use these two tables together
    b. do not use the column names in the same statement
    c. write both the table name and the column name, separated by a period
    d. write the table name only
ANSWER: c

POINTS: 1
REFERENCES: 32

19. Rows are also called_____.
    a. fields
    b. columns
    c. tuples
    d. attributes
ANSWER: c
POINTS: 1
REFERENCES: 32

20. The_____key of a table is the column or collection of columns that uniquely identifies a given row in that table.
    a. primary
    b. secondary
    c. foreign
    d. minor
ANSWER: a
POINTS: 1
REFERENCES: 32

21. The compound criteria (conditions) are created by using_____.
    a. AND, OR
    b. AND, NOR
    c. OR, NOT
    d. NOT, ONLY
ANSWER: a
POINTS: 1
REFERENCES: 37

22. Count, Sum, Avg, Max, and Min are a few of the built-in statistics or_____functions that can be used in a query.
    a. accumulated
    b. allowed
    c. primary
    d. aggregate
ANSWER: d
POINTS: 1
REFERENCES: 42

23. If you are sorting records by more than one field, the more important field is called the_____.
    a. primary sort key
    b. secondary sort key
    c. maximum sort key
    d. minor sort key
ANSWER: a

POINTS: 1
REFERENCES: 45

24. A query that changes data is a(n)_____query.
    a. addition
    b. update
    c. update
    d. select
ANSWER: c
POINTS: 1
REFERENCES: 52

25. A_____query creates a new table using the query results.
    a. new-table
    b. make-table
    c. create-table
    d. merge-table
ANSWER: b
POINTS: 1
REFERENCES: 53

26. The_____command within relational algebra takes a vertical subset of a table.
    a. SELECT
    b. DELETE
    c. PROGRAM
    d. PROJECT
ANSWER: d
POINTS: 1
REFERENCES: 57

27. Based on the *Customer* table below, which command lists all information from the table concerning customer 260?

CustomerNum	CustomerName	Street	City	State	PostalCode
126	Toys Galore	28 Laketon St.	Fulton	CA	90085
260	Brookings Direct	452 Columbus Dr.	Grove	CA	90092

    a. SELECT Customer 260 GIVING Answer
    b. SELECT Customer WHERE CustomerNum=260 GIVING Answer c.
    SELECT Customer WHERE Customernum='260' GIVING Answer d.
    SELECT Customer WHERE CustomerName='260' GIVING Answer
ANSWER: b
POINTS: 1
REFERENCES: 56

28. The_____command within relational algebra includes the word OVER followed by a list of the columns to be included.
    a. DELETE

    b. PROJECT
    c. INTERSECT
    d. UNION
*ANSWER:*b
*POINTS:*1
REFERENCES: 57

29. Which operation will allow you to extract data from more than one table?
    a. Select
    b. Merge
    c. Project
    d. Join
ANSWER: d
POINTS: 1
REFERENCES: 57

30. You can restrict the output from a join to include only certain columns by using the_____command.
    a. DELETE
    b. UNION
    c. PROJECT
    d. INTERSECT
ANSWER: c
POINTS: 1
REFERENCES: 58

31. Two tables are considered to be_____compatible if they have the same number of columns and their corresponding columns represent the same type of data.
    a. union
    b. intersection
    c. difference
    d. product
ANSWER: a
POINTS: 1
REFERENCES: 59

32. The_____operation is performed by the SUBTRACT command in relational algebra.
    a. union
    b. difference
    c. product
    d. intersection
ANSWER: b
POINTS: 1
REFERENCES: 60

33. The_____operator is used to concatenate every row in the first table with every row in the second table.

    a. union

    b. difference

    c. product

    d. intersection

*ANSWER:*c

*POINTS:*1

REFERENCES: 61

34. The product of two tables is also called the_____product.

    a. Cartesian

    b. aggregate

    c. Cathode

    d. exponential

ANSWER: a

POINTS: 1

REFERENCES: 61

35. Using the product operator, if table A has 4 rows and table B has 4 rows, the number of rows in the product of these two tables is_____.

    a. 4

    b. 8

    c. 16

    d. 256

ANSWER: c

POINTS: 1

REFERENCES: 61

Completion

36. A(n)_____database is a collection of tables.

*ANSWER:*relational

*POINTS:*1

REFERENCES: 31

37. The relationships between tables are handled through_____columns.

*ANSWER:*common

*POINTS:*1

REFERENCES: 31

38. Multiple entries in tables are often called_____.

ANSWER: repeating groups

POINTS: 1

REFERENCES: 31

39. When a structure satisfies all the properties of a relation except for the first item—in other words, some entries contain repeating groups and thus are not single-valued—it is referred to as a(n)_____.

ANSWER: unnormalized relation

POINTS: 1

REFERENCES: 31

40. Columns in a table are often called_____.

ANSWER: fields

                  attributes

POINTS: 1

REFERENCES: 32

41. Conditions that data must satisfy are called_____.

*ANSWER:*criteria

*POINTS:*1

REFERENCES: 36

42. A(n)_____field is a field that is the result of a calculation using one or more existing fields.

      *ANSWER:*computed

               calculated

*POINTS:*1

REFERENCES: 41

43. To list the records in a query's results in a particular order, you need to_____the records.

*ANSWER:*sort

*POINTS:*1

REFERENCES: 45

44. The field on which records are sorted is called the_____.

ANSWER: sort key

POINTS: 1

REFERENCES: 45

45. _____is a theoretical way of manipulating a relational database.

*ANSWER:*Relational algebra

*POINTS:*1

REFERENCES: 56

Essay

46. Provide a definition for the term relation.

ANSWER: A relation is a two-dimensional table in which:

              1. The entries in the table are single-valued; that is, each location in the table contains a single entry.

              2. Each column has a distinct name

              3. All values in a column are values of the same attributes

              4. The order of columns is immaterial

              5. Each row is distinct

              6. The order of rows is immaterial

POINTS: 1

REFERENCES: 31

47. What is the difference between an AND criterion and an OR criterion? How is each criterion created in QBE?

ANSWER: In an AND criterion, both criteria must be true for the compound criterion to be true. In an OR criterion, the overall criterion is true if either of the individual criteria is true. In QBE, to create an AND criterion, place the criteria for multiple fields on the same Criteria row in the design grid; to create an OR criterion, place the criteria for multiple fields on different Criteria rows in the design grid.

POINTS: 1

REFERENCES: 37

48. List at least six of the aggregate functions available in Access. Explain how to use any of these functions in a query.

ANSWER: All products that support QBE, including Access, support the following built-in functions (called aggregate functions in Access): Count, Sum, Avg (average), Max (largest value), Min (smallest value), StDev (standard deviation), Var (variance), First, and Last. To use any of these functions in a query, you include them in the Total row for the desired column in the design grid. By default, the Total row does not appear automatically in the design grid. To include it, you must click the Totals button in the Show/Hide group on the Query Tools Design tab.

POINTS: 1

REFERENCES: 42

49. Discuss the difference between the major sort key and the minor sort key.

ANSWER: To list the records in query results in a particular way, you need to **sort** the records. The field on which

POINTS: records are sorted is called the **sort key**; you can sort records using more than one field when necessary.

REFERENCES: When you are sorting records by more than one field (such as sorting by rep number and then by customer name), the first sort field (RepNum) is called the **major sort key** (also called the **primary sort**

45 **key**) and the second sort field (CustomerName) is called the **minor sort key** (also called the **secondary sort key**).

50. Explain what relational algebra is and how it is used.

ANSWER: Relational algebra is a theoretical way of manipulating a relational database. Relational algebra includes operations that act on existing tables to produce new tables, similar to the way the operations of addition and subtraction act on numbers to produce new numbers in the mathematical algebra with which you are familiar. Retrieving data from a relational database through the use of relational algebra involves issuing relational algebra commands to operate on existing tables to form a new table containing the desired information. Sometimes you might need to execute a series of commands to obtain the desired result.

POINTS: 1

REFERENCES: 56