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PRACTICE QUESTIONS

Information Technology Specialist

DATABASES—PEARSON—IT— SPECIALIST— CERTIFICATION

Databases (Pearson IT Specialist Certification)

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Information Technology Specialist **DATABASES-PEARSON-IT-SPECIALIST-CERTIFICATION**, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **DATABASES-PEARSON-IT-SPECIALIST-CERTIFICATION**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

MULTIPLE CHOICE

A librarian needs to track books and the authors who wrote them. Each book can have multiple authors, and each author can write multiple books. Which combination of tables and key definitions correctly models this relationship in a relational database? (Choose two.)

- ☒ **A** Create a BOOKS table with a primary key book_id and an AUTHORS table with a primary key author_id
- ☒ **B** Create a junction table (e.g., BOOK_AUTHORS) containing book_id and author_id as foreign keys referencing both tables
- ☐ **C** Add a single author_id column directly to the BOOKS table as a foreign key, since each book has only one author
- ☐ **D** Combine all book and author records into a single table to avoid the need for foreign keys

ANSWER A - B

WHY A many-to-many relationship between books and authors is correctly modeled using two parent tables (BOOKS and AUTHORS), each with its own primary key, plus a junction (associative) table BOOK_AUTHORS whose composite key consists of foreign keys to both parent tables. Option C models only a one-to-many relationship and would lose data for books with multiple authors. Option D violates first normal form and eliminates referential integrity.

QUESTION 2

MULTIPLE CHOICE

Which two SQL statements correctly return only the customer_name values from the CUSTOMERS table where the city is 'Boston' AND the customer_id is greater than 100? (Choose two.)

- ☒ **A** `SELECT customer_name FROM customers WHERE city = 'Boston' AND customer_id > 100;`
- ☐ **B** `SELECT customer_name FROM customers WHERE city = 'Boston' OR customer_id > 100;`
- ☐ **C** `SELECT customer_name FROM customers WHERE city = 'Boston' && customer_id > 100;`
- ☒ **D** `SELECT DISTINCT customer_name FROM customers WHERE city = 'Boston' AND customer_id > 100;`

ANSWER A - D

WHY Option A correctly applies AND between the two predicates. Option D is also correct because SELECT DISTINCT returns unique customer_name values meeting the same WHERE clause; DISTINCT does not change the filter logic. Option B uses OR, which would return rows meeting either condition, not both. Option C uses '&&' which is not standard SQL Boolean syntax (though MySQL accepts it, the standard operator is AND).

QUESTION 3

SINGLE CHOICE

In a relational database, what is the correct term for a single row in a table that contains a complete set of related values about one entity (for example, one row describing one specific employee)?

- ☐ **A** Field
- ☒ **B** Record
- ☐ **C** Attribute
- ☐ **D** Schema

ANSWER B

WHY A record (also called a tuple or row) is the complete set of values for one entity across all columns. A field is a single column/cell value, an attribute is the column definition, and a schema is the overall structure of the database or a table. In this exam's vocabulary, 'record' is the term used for a row.

QUESTION 4 SINGLE CHOICE

Which property of a primary key ensures that no two rows in a table can have the same value in that column, and that the value cannot be NULL?

- ☐ A Referential integrity
- ☒ B Uniqueness and NOT NULL
- ☐ C Foreign key constraint
- ☐ D Index clustering

ANSWER B

WHY A primary key, by definition, must uniquely identify each row (no two rows share the same value) and must never be NULL. These are the two defining properties: uniqueness and NOT NULL. Referential integrity relates to foreign keys, not the primary key itself; a foreign key constraint enforces that values match primary keys in another table; and index clustering refers to physical storage order.

QUESTION 5 SINGLE CHOICE

An employee database has an EMPLOYEES table (with columns employee_id and name) and a DEPARTMENTS table (with columns department_id and dept_name). A report must list every employee and, when applicable, the name of the department they belong to. Employees without an assigned department must still appear in the result. Which type of JOIN is required?

- ☐ A INNER JOIN
- ☒ B LEFT JOIN
- ☐ C RIGHT JOIN
- ☐ D CROSS JOIN

ANSWER B

WHY A LEFT JOIN (with EMPLOYEES as the left table) returns every row from EMPLOYEES, plus the matching department data where it exists. Rows without a matching department show NULL for the department columns. INNER JOIN would exclude employees without a department, which violates the requirement. RIGHT JOIN would return all departments whether or not they had employees. CROSS JOIN produces a Cartesian product.

QUESTION 6 SINGLE CHOICE

A developer needs to permanently remove a table named OLD_ORDERS from the database, including its structure and all of its data. Which SQL statement accomplishes this?

- ☐ A DELETE TABLE old_orders;
- ☐ B TRUNCATE TABLE old_orders;
- ☒ C DROP TABLE old_orders;
- ☐ D REMOVE TABLE old_orders;

ANSWER C

WHY DROP TABLE removes both the structure (definition) and all data of the table from the database. TRUNCATE TABLE removes all rows but leaves the table structure intact. DELETE removes rows but does not remove the table itself. There is no REMOVE TABLE statement in standard SQL.

QUESTION 7 SINGLE CHOICE

Which of the following best describes the First Normal Form (1NF) requirement for a relational table?

- ☐ A Every non-key column must depend on the entire primary key
- ☐ B No non-key column may depend on another non-key column
- ☒ C Each column must contain only atomic (indivisible) values, and there must be no repeating groups
- ☐ D Every table must have a foreign key referencing another table

ANSWER C

WHY 1NF requires that values in each column be atomic (one value per cell, no arrays or lists), that there be no repeating groups, and that each row be unique. Option A describes 2NF, option B describes 3NF (removing transitive dependencies), and option D is not a normalization requirement.

QUESTION 8 SINGLE CHOICE

A database designer needs to store a customer's email address, which can vary in length but never exceeds 255 characters. Which SQL data type is most appropriate for this column?

- ☐ A CHAR(255)
- ☒ B VARCHAR(255)
- ☐ C INTEGER
- ☐ D DATE

ANSWER B

WHY VARCHAR(255) stores variable-length character data up to 255 characters and uses only as much storage as the actual value requires. CHAR(255) pads values with trailing spaces to always occupy 255 characters, wasting space and causing comparison issues. INTEGER stores whole numbers and DATE stores calendar dates, neither of which is appropriate for an email address.

QUESTION 9 SINGLE CHOICE

Consider a SALES table with columns order_id, region, and amount. Which query correctly returns the total sales amount for each region?

- ☐ A SELECT region, amount FROM sales;
- ☒ B SELECT region, SUM(amount) FROM sales GROUP BY region;
- ☐ C SELECT SUM(amount) FROM sales WHERE region IS NOT NULL;
- ☐ D SELECT region, COUNT(amount) FROM sales GROUP BY region;

ANSWER B

WHY SUM(amount) combined with GROUP BY region aggregates the total amount for each region. Option A returns individual rows, not aggregates. Option C sums across all regions together rather than per region. Option D counts rows instead of summing amounts, so it would not return the total sales amount.