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Chapter 13

1. Which of the following types of stored programs executes in response to an INSERT, UPDATE, or DELETE statement?

   a. event
   b. trigger
   c. stored procedure
   d. stored function

2. Which of the following types of stored programs executes when it's called from a SQL statement?

   a. event
   b. trigger
   c. stored procedure
   d. stored function

3. If you need to check a Boolean expression and execute statements depending on whether that expression is true or false, which of the following statements would you use?

   a. simple CASE
   b. WHILE
   c. REPEAT
   d. IF

4. If you need to check multiple Boolean expressions and execute several statements depending on the expressions, which of the following statements would you use?

   a. simple CASE
   b. searched CASE
   c. REPEAT
   d. WHILE

5. Which of the following statements do you use to get column values from a row in a cursor and store them in a series of variables?

   a. UPDATE
   b. OPEN
   c. FETCH
   d. WHILE

6. Which of the following statements can you use to go to the end of a loop?

   a. END
   b. LEAVE
   c. ITERATE
   d. WHILE

7. Which of the following is *not* one of the MySQL built-in named conditions?

   a. `NOT FOUND`
   b. `END OF FILE`
   c. `SQLWARNING`
   d. `SQLEXCEPTION`

8. Suppose you declare three condition handlers: one that handles errors for a SQLSTATE code, one that handles errors for a MySQL error code, and one that handles any error condition other than NOT FOUND. If an error occurs that could be handled by any of the three condition handlers, which condition handler will MySQL use to handle the error?

   a. the one for the SQLSTATE code
   b. the one for the MySQL error code
   c. the one that will catch any error condition other than NOT FOUND
   d. all of the above

9. Which of the following statements would you use to assign the value "Test" to a variable named "message"?

   a. `message = 'Test'`
   b. `SET message = 'Test'`
   c. `SET(message, 'Test')`
   d. `VARCHAR(message, 'Test')`

10. Which of the following types of handlers would you use if you want MySQL to skip the rest of the code in a block of code when it encounters an error?

    a. CONTINUE
    b. EXIT
    c. END
    d. SQLEXCEPTION

Chapter 14

1. You can *not* use transactions when you use
   a. save points
   b. locking
   c. the MyISAM database engine
   d. the InnoDB database engine

2. By default, when you execute an INSERT, UPDATE, or DELETE statement outside of a transaction, MySQL
   a. automatically commits changes
   b. commits the changes when a save point is reached
   c. commits the changes when the end of a stored procedure is reached
   d. commits the changes when the COMMIT statement is executed

3. Each of the following is a valid reason to use a transaction except for one. Which one is it?
   a. When you code two or more INSERT, UPDATE, or DELETE statements that affect related data.
   b. The failure of one statement in a set of INSERT, UPDATE, or DELETE statements will violate data integrity.
   c. When you move rows from one table to another table by using INSERT and DELETE statements.
   d. The results of a SELECT query will be used as a subquery.

4. Which of the following statements do you use to turn off autocommit mode until the statements in a transaction are committed or rolled back?
   a. `CREATE PROCEDURE`
   b. `START TRANSACTION`
   c. `SET AUTOCOMMIT OFF`
   d. `NO COMMIT`

5. Save points allow you to roll back a transaction
   a. to the beginning of the transaction
   b. to a particular save point
   c. both a and b
   d. None of above

6. Which of the following does MySQL use by default to prevent concurrency problems?
   a. transactions b. save points c. locks d. all of above

7. A lost update occurs when
   a. you perform an update on a set of rows when another transaction is performing an insert that affects one or more rows in that same set of rows
   b. a transaction selects data that isn't committed by another transaction
   c. two transactions select the same row and then update the row based on the values originally selected
   d. two SELECT statements that select the same data get different values because another transaction has updated the data in the time between the two statements

8. Which of the following occurs when neither of two transactions can be committed because they each have a lock on a resource needed by the other?
   a. lost update
   b. rollback
   c. deadlock
   d. common lock

9. By default, MySQL prevents *all but one* of the following types of concurrency problems.
   a. lost updates
   b. dirty reads
   c. nonrepeatable reads
   d. phantom reads

10. At the highest isolation level, MySQL can prevent
    a. dirty reads
    b. lost updates
    c. nonrepeatable reads
    d. all of the above

Chapter 15

1. When you use a stored procedure to insert a row into a table, the procedure must provide input parameters for

   a. every column
   b. every column except for columns that have default values
   c. every column except for columns that have default values or can accept null values
   d. every column except for columns that have default values, can accept null values, or are defined as auto increment columns

2. Checking parameters before they're used to make sure they're valid is referred to as:

   a. raising an error
   b. data validation
   c. throwing an exception
   d. all of the above

3. A user variable is

   a. available from statements coded both inside and outside of stored programs
   b. only available to the current user and cannot be seen or accessed by other users
   c. able to store various data types including string, numeric, and date/time types
   d. all of the above

4. To raise an error in a stored procedure, you must specify

   a. a MySQL error code
   b. a SQLSTATE code
   c. a named condition
   d. all of the above

5. Assuming that a stored procedure starts with the code that follows, which of the following statements calls the procedure and passes the values 47B and 200 to it?

```
CREATE OR REPLACE PROCEDURE update_credits
(
  in_param    VARCHAR(50),
  cr_param    DECIMAL(9,2)
)
AS
```

   a. `CALL update_credits '47B', 200;`
   b. `CALL update_credits('47B', 200);`
   c. `update_credits '47B', 200;`
   d. `update_credits('47B', 200);`

6. You can use dynamic SQL to do all but one of the following. Which one is it?

   a. Build a SQL statement based on parameters that are passed to a stored procedure.
   b. Store a SQL statement in a user variable.
   c. Prepare a SQL statement in a user variable.
   d. Execute a SQL statement in a user variable.

7. To accept a value from a calling program, you can use

   a. an input parameter
   b. an output parameter
   c. a user variable
   d. all of the above

8. If binary logging is enabled and you have a function that performs a calculation based on the values you pass to it without retrieving data from the database, which of the following characteristics *must* you code on the function?

   a. `NOT DETERMINISTIC`
   b. `READS SQL DATA`
   c. `NO SQL`
   d. all of the above

9. Assuming that a stored function starts with the code that follows, which of the following column specifications could you use in a SELECT statement to pass the invoice_date and invoice_terms columns to the function and use days_old as the column name?

```
CREATE OR REPLACE FUNCTION get_days_overdue
(
  invoice_date_param    DATE,
  invoice_terms_param   INT
)
RETURN INT
DETERMINISTIC READS SQL DATA
AS
```

a. `days_old = get_days_overdue(invoice_date, invoice_terms)`
b. `days_old = get_days_overdue(invoice_terms, invoice_date)`
c. `get_days_overdue(invoice_date, invoice_terms) AS days_old`
d. `get_days_overdue(invoice_terms, invoice_date) AS days_old`

10. MySQL Workbench can help get you started writing scripts that create stored procedures and functions. When you select the Create Stored Procedure or the Create Funcion item, MySQL Workbench automatically generates some basic code for the routine, including

a. a DELIMITER statement
b. BEGIN and END keywords
c. a CREATE PROCEDURE or CREATE FUNCTION statement
d. all of the above

Chapter 16

1. Which of the following is the beginning of a trigger named customers_after_insert that's executed after an INSERT statement on the table named customers?

a.
```
CREATE TRIGGER customers_after_insert
  AFTER INSERT customers
```
b.
```
CREATE TRIGGER customers_after_insert
  AFTER INSERT ON customers
```
c.
```
CREATE TRIGGER ON customers
  AFTER INSERT customers_after_insert
```
d.
```
CREATE TRIGGER customers_after_insert
  INSERT AFTER ON customers
```

2. To code an event that executes every month, you would use the

a. SET statement
b. GLOBAL keyword
c. AT clause
d. EVERY clause

3. Which of the following do you typically use to insert rows into an audit table?

a. BEFORE trigger
b. AFTER trigger
c. one-time event
d. recurring event

4. Which of the following do you typically use to enforce data consistency?

a. BEFORE trigger
b. AFTER trigger
c. one-time event
d. recurring event

5. Which of the following keywords can you use in a trigger to work with the values in a row that's being deleted?

a. `OLD`
b. `NEW`
c. both a and b
d. neither a nor b

6. Which of the following keywords can you use in a trigger to work with the values in a row that's being updated?

   a. `OLD`
   b. `NEW`
   c. both a and b
   d. neither a nor b

7. Which of the following clauses must you include on the CREATE TRIGGER statement to create a row-level trigger?

   a. `ROW LEVEL`
   b. `FOR ROW LEVEL`
   c. `EACH ROW`
   d. `FOR EACH FOW`

8. Which of the following statements do you use to turn the event scheduler on or off?

   a. `GO`
   b. `RUN`
   c. `DO`
   d. `SET`

9. What of the following statement about events is *not* true?

   a. They are named database objects.
   b. They execute according to the event scheduler.
   c. They must recur at regular intervals and cannot be a one-time event.
   d. They are only available if the event scheduler is on.

10. You can use the ALTER EVENT statement to do all but one of the following. Which one is it?

    a. disable an event
    b. enable an event
    c. rename an event
    d. drop an event

CHAPTER 17

1. Which of the following is *not* typically the responsibility of a database administrator?

   a. Maintain log files
   b. Back up the database regularly
   c. Develop applications that access the database
   d. Maintain user accounts

2. Which of the following logs contains messages about server startup and shutdown?

   a. binary
   b. error
   c. relay
   d. startup

3. To use MySQL Workbench to stop a process, you can select the process from a list and

   a. click on the Kill Connection button.
   b. click on the Stop Process button.
   c. click on the Discard button.
   d. click on the Stop Query button.

4. What does the following code do?

```
SELECT @@autocommit
```

   a. It gets the global value of the autocommit variable
   b. It gets the session value of the autocommit variable
   c. It gets the session value of the autocommit variable if it exists. Otherwise, it gets the session value.
   d. It gets the global value of the autocommit variable if it exists. Otherwise, it gets the session value.

5. To manage text-based logs, you can use a strategy known as:

   a. log rotation
   b. age-based expiration
   c. replication
   d. configuration

6. In which of the following types of files are the system variables for a MySQL server stored?

   a. data file
   b. log file
   c. configuration file
   d. system file

7. The connections to a database server are also referred to as

   a. queries
   b. processes
   c. events
   d. commands

8. Variables that control how the server is currently configured are known as

   a. system variables
   c. use MySQL Workbench
   c. status variables

9. The MySQL server process that runs in the background is called

   a. MySQL db
   b. MySQL database
   c. MySQL daemon
   d. MySQL engine

10. Which of the following system variables controls whether the binary log is enabled or disabled?

    a. log_bin
    b. log_binary
    c. bin_log
    d. binary_log