IBM Exam 610 Question Bank
2/8/15
Time Limit: 90 Minutes **Name (Print):** _____

This question bank contains 28 pages (including this cover page) and 104 questions.

- IBM Exam 610 corresponds to **Test C2090-610: DB2 10.1 Fundamentals**
- The questions adapted from the following sources:
  - **DB 2 10.1 Fundamentals Certification Study Guide** by Roger E. Sanders

1 Planning

1. (1 point) A database will be used primarily to identify sales patterns for products sold within the last three years and to summarize sales by region, on a quarterly basis. Which type of system is needed?
   A. Analytical
   B. DB2 pureScale
   C. Data warehouse
   D. Online transaction processing (OLTP)

2. (1 point) Which product can be used to tune performance for a single query?
   A. IBM Data Studio
   B. IBM Control Center
   C. IBM Data Administrator
   D. IBM Workload Manager

3. (1 point) Which two DB2 products are suitable for very large data warehouse applications? (Choose two.)
   A. DB2 for i
   B. DB2 for AIX
   C. DB2 for z/OS
   D. DB2 pureScale
   E. DB2 Express-C

4. (1 point) What is the DB2 Workload Manager (WLM) used for?
   A. To identify, diagnose, solve, and prevent performance problems in DB2 products and associated applications.
   B. To customize execution environments for the purpose of controlling system resources so that one department or service class does not overwhelm the system.
   C. To respond to significant changes in a database's workload by dynamically distributing available memory resources among several different database memory consumers.
   D. To improve the performance of applications that require frequent, but relatively transient, simultaneous user connections by allocating host database resources only for the duration of an SQL transaction.

5. (1 point) Which of the following is NOT a characteristic of a data warehouse?
   A. Sub-second response time
   B. Voluminous historical data
   C. Heterogeneous data sources
   D. Summarized queries that perform aggregations and joins

6. (1 point) Which statement about the DB2 pureScale feature is NOT true?
   A. The DB2 pureScale feature provides a database cluster solution for nonmainframe platforms.
   B. The DB2 pureScale feature is only available as part of DB2 Advanced Enterprise Server Edition.
   C. The DB2 pureScale feature can only work with the General Parallel File System (GPFS) file system.
   D. The DB2 pureScale feature is best suited for online transaction processing (OLTP) workloads.

7. (1 point) Which two statements about large object (LOB) locators are true? (Choose two.)
   A. A LOB locator represents a value for a LOB resource that is stored in a database.
   B. A LOB locator is a simple token value that is used to refer to a much bigger LOB value.
   C. A LOB locator is a special data type that is used to store LOB data in external binary files.
   D. A LOB locator represents a value for a LOB resource that is stored in an external binary file.
   E. A LOB locator is a mechanism that acts similar to an index in the way that is organizes LOB values so they can be quickly located in response to a query.

8. (1 point) Which type of database workload typically involves making changes to a small number of records within a single transaction?
   A. Decision support
   B. Data warehousing
   C. Online analytical processing (OLAP)
   D. Online transaction processing (OLTP)

9. (1 point) Which of the following is NOT a characteristic of an OLTP database?
   A. Current data
   B. Frequent updates
   C. Granular transactions
   D. Optimized for queries

10. (1 point) Which two platforms support DB2 10.1 pureScale environments? (Choose two.)
    A. IBM mainframes running z/OS
    B. IBM p Series servers running AIX
    C. IBM p Series servers running Linux
    D. IBM x Series servers running Linux
    E. IBM x Series servers running a supported version of Windows

11. (1 point) Which tool can analyze and provide recommendations for tuning individual queries?
    A. IBM InfoSphere Data Architect
    B. IBM InfoSphere Optim Query Tuner
    C. IBM InfoSphere Optim pureQuery Runtime
    D. IBM InfoSphere Optim Performance Manager Extended Edition

12. (1 point) Which SQL statement will create a table named EMPLOYEE that can be used to store XML data?
    A. CREATE TABLE employee (empid INT, resume XML)
    B. CREATE TABLE employee (empid INT, resume XML(2000))
    C. CREATE TABLE employee (empid INT, resume CLOB AS XML)
    D. CREATE TABLE employee (empid INT, resume CLOB USING XML)

13. (1 point) What DB2 product provides a complete data warehousing solution that contains components that facilitate data warehouse construction and administration?
    A. DB2 pureScale Feature
    B. DB2 Workload Manager
    C. IBM InfoSphere Warehouse
    D. Database Partitioning Feature

14. (1 point) Which statement about IBM Data Studio is NOT true?
    A. The IBM Data Studio administration client can be installed on servers running Red Hat Linux, SUSE Linux, Windows, and AIX.
    B. IBM Data Studio replaces the DB2 Control Center as the standard GUI interface for DB2 database administration and application development.
    C. IBM Data Studio is an Eclipsed-based, integrated development environment (IDE) that can be used to perform instance and database administration.
    D. IBM Data Studio allows users to connect to a DB2 database using a wizard; however, users are required to provide login credentials before a connection will be established.

15. (1 point) Which statement about inline large objects (LOBs) is NOT true?
    A. When a table contains columns with inline LOBs, fewer rows can fit on a page.
    B. Inline LOBs are created by appending the INLINE LENGTH clause to a LOB column's definition.
    C. Because DML operations against inline LOBs are never logged, their use can reduce logging overhead.
    D. Inline LOBs improve query performance by storing LOB data in the same data pages as the rest of a table's rows, rather than in a separate LOB storage object.

2 Security

16. (1 point) A user named USER1 has been granted `DATAACCESS` authority for a database named PAYROLL. What is user USER1 allowed to do?

    A. Implicitly create a new schema in the PAYROLL database.

    B. Grant and revoke priviledges on objects that reside in the PAYROLL database.

    C. Retrieve and change data stored in user tables, views. and materialized query tables.

    D. Create database objects, issue database-specific DB2 commands, and run DB2 utilities that do not change data.

17. (1 point) Which attribute is NOT needed to define a trusted context?

    A. A system authorization ID

    B. A data stream encryption value

    C. A system authorization password

    D. The IP address or domain name of an incoming connection

18. (1 point) Which SQL statement will take the ability to run an Embedded SQL application named PERF_REVIEW that calls a package named CORP.CALC_Bonus away from a user named USER1?

    A. `REVOKE EXECUTION ON APPLICATION` perf_review `FROM` user1

    B. `REVOKE EXECUTION ON PACKAGE` corp.calc_bonus `FROM` user1

    C. `REVOKE EXECUTION ON APPLICATION` perf_review `PACKAGE` corp.calc _bonus `FROM` user1

    D. `REVOKE EXECUTION ON APPLICATION` perf_review `USING PACKAGE` corp.calc_bonus `FROM` user1

19. (1 point) If a user is given `SELECT` privilege on a table named EMPLOYEES, which two actions are they allowed to perform? (Choose two.)

    A. Add data to the EMPLOYEE table.

    B. Create a view on the EMPLOYEE table.

    C. Retrieve data from the EMPLOYEE table.

    D. Create an index for the EMPLOYEE table.

    E. Change the definition for the EMPLOYEE table.

20. (1 point) Which SQL statement will allow a user named USER1 to both remove records from a table named SALES and give the ability to remove records from the SALES table to others?

    A. `GRANT DELETE ON TABLE` sales `TO` user1 `WITH GRANT OPTION`

    B. `GRANT REMOVE ON TABLE` sales `TO` user1 `WITH GRANT OPTION`

    C. `GRANT DELETE ON TABLE` sales `TO` user1 `WITH GRANT PRIVILEGES`

    D. `GRANT REMOVE ON TABLE` sales `TO` user1 `WITH GRANT PRIVILEGES`

21. (1 point) If a user is granted the `BIND` privilege, what are they allowed to do?

    A. Create a new package.

    B. Bind or rebind (recreate) a specific package.

    C. Register user-defined functions (UDFs) and procedures.

    D. Associate user-defined functions (UDFs) and procedures with specific database objects.

22. (1 point) Which statement about `Security Administrator (SECADM)` authority is true?

    A. Users with `SECADM` authority are not allowed to access data stored in system catalog tables and views.

    B. Only users with `SECADM` authority are allowed to grant and revoke `SECADM` authority to/from others.

    C. When a user with `SECADM` authority creates a database, that user is automatically granted `DBADM` authority for that database.

    D. With DB2 for z/OS, `SYSADM` authority and `SECADM` authority are combined under `SYSADM` authority and cannot be separated.

23. (1 point) Which statement about trusted context is true?

    A. Trusted context objects can only be defined by someone with `SYSADM` or `SECADM` authority.

    B. An authorization ID, IP address, encryption value, and authentication type must be identified before a trusted context can be defined.

    C. After a trusted connection is established, if a switch request is made with an authorization ID that is not allowed on the connection, the connection is placed in the "Unconnected" state.

    D. If a trusted context is assigned to a role, any authorization ID that uses the trusted context will acquire the authorities and privileges that have been assigned to the role; any authorities or privileges that have been granted to the authorization ID are ignored.

24. (1 point) If a user has `ACCESSCTRL` authority, which two authorities and/or privileges are they allowed to grant to others? (Choose two.)

    A. `SYSADM`

    B. `SECADM`

    C. `EXECUTE`

    D. `CREATETAB`

    E. `ACCESSCTRL`

25. (1 point) Which of the following is used to group a collection of privileges together so that they can be simultaneously granted to and revoked from multiple users?

    A. Role

    B. Catalog

    C. Function

    D. Collection

26. (1 point) Which method for restricting data access relies on the server or the local DB2 subsystem to prevent unauthorized users from accessing data stored in a database?

    A. Privileges

    B. Authentication

    C. Label-based access control

    D. Row and column access control

27. (1 point) When is an SQL search condition used to limit access to data in a table?

    A. When `mandatory access control (MAC)` is used to protect the table.

    B. When `label-based access control (LBAC)` is used to protect the table.

    C. When `discretionary access control (DAC)` is used to protect the table.

    D. When `row and column access control (RCAC)` is used to protect the table.

28. (1 point) Which SQL statement will give user USER1 the ability to create tables in a table space named USERSPACE2?

    A. `GRANT USE OF TABLESPACE` userspace2 `TO` user1

    B. `GRANT ALTER ON TABLESPACE` userspace2 `TO` user1

    C. `GRANT USAGE OF TABLESPACE` userspace2 `TO` user1

    D. `GRANT CREATETAB ON TABLESPACE` userspace2 `TO` user1

29. (1 point) Which SQL statement will give user USER1 the ability to assign a comment to a table named MYTABLE?

    A. `GRANT ALTER ON TABLE` mytable `TO` user1

    B. `GRANT USAGE ON TABLE` mytable `TO` user1

    C. `GRANT INSERT ON TABLE` mytable `TO` user1

    D. `GRANT UPDATE ON TABLE` mytable `TO` user1

30. (1 point) Which privileges are needed to invoke an SQL stored procedure that queries a table?

    A. `CALL` privilege on the procedure; `SELECT` privilege on the table.

    B. `EXECUTE` privilege on the procedure; `SELECT` privilege on the table.

    C. `CALL` privilege on the procedure; `REFERENCES` privilege on the table.

    D. `EXECUTE` privilege on the procedure; `REFERENCES` privilege on the table.

31. (1 point) Which privileges allows a user to use the `PREVIOUS VALUE` and `NEXT VALUE` sequence expressions?

    A. `USE`

    B. `ALTER`

    C. `USAGE`

    D. `EXECUTE`

32. (1 point) A table named CUSTOMER was created as follows:

```
CREATE TABLE customer
(cust_id   INTEGER NOT NULL PRIMARY KEY,
 f_name    VARCHAR(30),
 l_name    VARCHAR(40),
 cc_number NUMERIC(16,0) NOT NULL)
```

    Which two actions will prevent unauthorized users from accessing credit card number (CC_NUMBER) information? (Choose two.)

    A. Assign the CC_NUMBER column to a restricted role that only authorized users are allowed to access.

    B. Only grant `ACCESSCTRL` authority for the CC_NUMBER column to users who need to access credit card number information.

    C. Alter the table definition so that CC_NUMBER data is stored in a separate schema that only authorized users are allowed to access.

    D. Create a view for the CUSTOMER table that does not contain the CC_NUMBER column and require unauthorized users to use the view.

    E. Create a column mask for the CC_NUMBER column with the ENABLE option specified and alter the CUSTOMER table to activate column access control.

33. (1 point) Which authority is needed to create and drop databases?

    A. `DBADM`

    B. `DBCTRL`

    C. `SYSCTRL`

    D. `SYSMAINT`

34. (1 point) Which statement regarding `label-based access control (LBAC)` is true?

    A. Two types of security label components are supported: array and tree.

    B. Every LBAC-protected table must have only one security policy associated with it.

    C. To configure a table for row-level LBAC protect, you must include the `SECURED WITH` clause with each column's definition.

    D. To configure a table for column-level LBAC protection, you must include a column with the `DB2SECURITYLABEL` data type in the table's definition.

35. (1 point) Which method for restricting data access relies on an SQL CASE expression to control the conditions under which a user can access for a column?

    A. Authority

    B. Authentication

    C. Label-based access control

    D. Row and column access control

36. (1 point) Which two statements about Row and column Access Control (RCAC) are valid? (Choose two.)

    A. A column mask's access control rule is defined by an SQL search condition.

    B. A column mask's access control rule is defined by an SQL CASE expression.

    C. A row permission's access control rule is defined by an SQL search condition.

    D. A row permission's access control rule is defined by an SQL CASE expression.

    E. A column mask's access control rule is defined by a `SECURED WITH` clause of a `CREATE TABLE` or `ALTER TABLE` statement.

37. (1 point) Which privilege is needed to invoke a stored procedure?

    A. `USE`

    B. `CALL`

    C. `USAGE`

    D. `EECUTE`

3 Working with Databases and Database Objects

38. (1 point) Which statement about views is NOT true?

    A. A view can be defined as being updatable or read-only.

    B. Views obtain their data from the table(s) or view(s) they are based on.

    C. A view can be used to limit a user's ability to retrieve data from a table

    D. The SQL statement provided as part of a view's definition determines what data is presented when the view is referenced.

39. (1 point) If the following SQL statement is executed:

```
CREATE DISTINCT TYPE pound_sterling AS DECIMAL (9,2) WITH COMPARISONS
```

    Which event will NOT happen?

    A. A user-defined data type that can be used to store numerical data as British currency will be created.

    B. Six comparison functions will be created so that POUND_STERLING values can be compared to each other.

    C. Two casting functions will be created so that POUND_STERLING values can be converted to DECIMAL values, and vice versa.

    D. A compatibility function will be created so all of DB2's built-in functions that accept DECIMAL values as input can be used with POUND_STERLING data.

40. (1 point) If the following SQL statements are executed:

```
CREATE TABLE sales(
order_num      INTEGER NOT NULL,
customer_name  VARCHAR(50),
amount_due     DECIMAL(6,2));
CREATE UNIQUE INDEX idx_ordernum ON sales(order_num);
```

    Which two statements are true? (Choose two.)

    A. Every ORDER_NUM value must be unique.

    B. Duplicate ORDER_NUM values are allowed.

    C. No other indexes can be created for the SALES table.

    D. A query will return rows from the SALES table in no specific order.

    E. Index IDX_ORDERNUM will serve as the primary key for the SALES table.

41. (1 point) What is the minimum product that is needed to give applications running on personal computers the ability to work with DB2 databases that reside on System z platforms, without using a gateway?

    A. DB2 Connect Personal Edition

    B. DB2 Connect Enterprise Edition

    C. IBM DB2 Connect Unlimited Advanced Edition for System z

    D. IBM DB2 Connect Unlimited Advanced Edition for System i

42. (1 point) Which action does NOT need to be performed to complete the definition of an application-period temporal table?

    A. A business-time-begin column must be created for the table.

    B. A business-time-end column must be created for the table.

    C. A BUSINESS_TIME period must be specified in a CREATE or ALTER of the table.

    D. A unique index must be created that prevents overlapping of the BUSINESS_TIME period of the table.

43. (1 point) What are buffer pools used for?

    A. To cache table and index data as it is read from disk.

    B. To keep track of changes that are made to a database as they occur.

    C. To control the amount of processor resources that SQL statements can consume.

    D. To provide a layer of indirection between a data object and the storage where that object's data resides.

44. (1 point) Which statement regarding distributed requests is NOT true?

    A. To implement distributed request functionality, all you need is a federated database and one or more remote data sources.

    B. Distributed request functionality allows a UNION operation to be performed between a DB2 table and an Oracle view.

    C. Distributed request functionality allows SQL operations to reference two or more databases or relational database management systems in a single statement.

    D. DB2 Connect provides the ability to perform distributed requests across members of the DB2 Family, as well as across other relational database management systems.

45. (1 point) Which statement about indexes is NOT true?

    A. An index can be used to enforce the uniqueness of records in a table.

    B. Indexes provide a fast, efficient method for locating specific rows in a table.

    C. When an index is created, metadata for the index is stored in the system catalog.

    D. Indexes automatically provide both a logical and physical ordering of the rows in a table.

46. (1 point) What are Materialized Query Tables (MQTs) used for?

    A. To physically cluster data on more than one dimension, simultaneously.

    B. To improve the execution performance of qualified SELECT statements.

    C. To hold nonpresistent data temporarily, on behalf of a single application.

    D. To track effective dates for data that is subject to changing business conditions.

47. (1 point) Which two actions must be performed to track changes made to a system-period temporal table over time? (Choose two.)

    A. A history table must be created with columns that are identical to those of the system-period temporal table.

    B. The system-period temporal table must be altered using the ADD VERSIONING clause to relate it to a history table.

    C. A primary key must be defined for the system-period temporal table that prevents overlapping of SYSTEM_TIME periods.

    D. A unique index must be defined on the transaction-start-id column of both the system-period temporal table and its associated history table.

    E. The system-period temporal table must be altered to add system-time-begin, system-time-end, transaction-start-id, and transaction-end-id columns.

48. (1 point) Which database object can be used to automatically generate a numeric value that is not tied to any specific column or table?

    A. Alias

    B. Schema

    C. Package

    D. Sequence

49. (1 point) Which column is NOT required as part of the table definition for a system-period temporal table?

    A. A row-begin column with a TIMESTAMP(12) data type

    B. A row-end column with a TIMESTAMP(12) data type

    C. A transaction-start-id column with a TIMESTAMP(12) data type

    D. A transaction-stop-id column with a TIMESTAMP(12) data type

50. (1 point) Which object can NOT be enabled for compression?

    A. Views

    B. Indexes

    C. Base tables

    D. Temporary tables

51. (1 point) What is a schema used for?

    A. To provide an alternate name for a table or view.

    B. To provide a logical grouping of database objects.

    C. To generate a series of numbers, in ascending or descending order.

    D. To provide an alternative way of describing data stored in one or more tables.

52. (1 point) Which view definition type is NOT supported?

    A. Insertable

    B. Updatable

    C. Read-only

    D. Write-only

53. (1 point) When should an application-period temporal table be used?
    A. When you want to keep track of historical versions of a table's rows.
    B. When you want to define specific time periods in which data is valid.
    C. When you want to cluster data according to the time in which rows are inserted.
    D. When you want to cluster data on more than one key or dimension, simultaneously.

54. (1 point) Which statement about buffer pools is NOT true?
    A. Every table space must have a buffer pool assigned to it.
    B. One buffer pool is created automatically as part of the database creation process.
    C. Dirty pages are automatically removed from a buffer pool when they are written to storage.
    D. Once a page has been copied to a buffer pool, it remains there until the space it occupies is needed.

55. (1 point) Which DB2 object can a view NOT be derived from?
    A. Alias
    B. View
    C. Table
    D. Procedure

56. (1 point) Which two expressions can be used with a sequence? (Choose two.)
    A. NEXT VALUE
    B. PRIOR VALUE
    C. CURRENT VALUE
    D. PREVIOUS VALUE
    E. SUBSEQUENT VALUE

57. (1 point) Which object is a distinct data type defined into?
    A. Schema
    B. Package
    C. Database
    D. Table space

58. (1 point) Which two objects can NOT be created in DB2? (Choose two.)
    A. Plan
    B. Trigger
    C. Scheme
    D. Function
    E. Sequence

59. (1 point) Which statement about Type 2 connections is true?
    A. Type 2 connections cannot be used with DB2 for z/OS
    B. Type 2 connections are used by default with DB2 for Linux, Unix, and Windows.
    C. Type 2 connections allow applications to be connected to only one database at a time.
    D. Type 2 connections allow applications to connect to and work with multiple DB2 databases simultaneously.

60. (1 point) Which two statements about bitemporal tables are valid? (Choose two.)
    A. Bitemporal tables are system tables and can only be queried by the table owner.
    B. When data in a bitemporal table is updated, a row is added to its associated history table.
    C. Creating a bitemporal table is similar to creating a base table except users must define a SYSTEM_TIME_PERIOD column.
    D. When querying a bitemporal table, you have the option of providing a system time-period specification, a business time-period specification, or both.
    E. Bitemporal tables must contain bitemporal-time-begin, bitemporal-time-end, and transaction-start-i id columns, along with SYSTEM_TIME and BUSINESS_TIME periods.

61. (1 point) Which programming interface is widely used for database access because it allows applications to run, unchanged, on most hardware platforms?
    A. ODBC
    B. SQLJ
    C. JDBC
    D. OLE DB

62. (1 point) Which two types of temporal tables can be used to store time-sensitive data? (Choose two.)
    A. Bitemporal
    B. Time-period
    C. System-period
    D. Business-period
    E. Application-period

63. (1 point) In which of the following scenarios would a stored procedure be beneficial?
    A. An application running on a remote client needs to track every modification made to a table that contains sensitive data.
    B. An application running on a remote client needs to be able to convert degress Celsius to degrees Fahrenheit and vice versa.
    C. An application running on a remote client needs to ensure that every new employee that joins the company is assigned a unique, sequential employee number.
    D. An application running on a remote client needs to collect input values from a user, perform a calculation using the values provided, and store the input data, along with the calculation results, in a base table.

64. (1 point) Given the following SQL statement:

```
CREATE ALIAS emp_info FOR employees
```

Which two objects can the name EMPLOYEES refer to? (Choose two.)

A. A view
B. An alias
C. An index
D. A sequence
E. A procedure

65. (1 point) Which operation can NOT be performed by executing an ALTER SEQUENCE statement?

A. Change a sequence's data type.
B. Change whether a sequence cycles.
C. Establish new minimum and maximum sequence values.
D. Change the number of sequence numbers that are cached.

66. (1 point) Which object must exist before an index can be created?

A. View
B. Table
C. Schema
D. Sequence

67. (1 point) If the following SQL statement is executed:

```
CREATE DATABASE payroll
```

Which two statements are true? (Choose two.)

A. The PAYROLL database will have a page size of 4KB.
B. The PAYROLL database will have a page size of 8KB.
C. The PAYROLL database will be an automatic storage database.
D. The PAYROLL database will not be an automatic storage database.
E. The PAYROLL database will be assigned the comment "PAYROLL DATABASE."

4 Working with DB2 Data Using SQL

68. (1 point) If the following result set is desired:

```
STATE          REGION          AVG_INCOME
-------------- --------------- -------------
MARYLAND       MID-ATLANTIC     86056.00
NEW JERSEY     NORTHEAST        85005.00
CONNECTICUT    NORTHEAST        84558.00
MASSACHUSETTS  NORTHEAST        82009.00
ALASKA         PACIFIC-ALASKA   79617.00
```

Which SQL statement must be executed?

A.
```
SELECT state, region, avg_income
  FROM census_data
  ORDER BY 3
  FETCH FIRST 5 ROWS
```

B.
```
SELECT state, region, avg_income
  FROM census_data
  ORDER BY 3
  FETCH FIRST 5 ROWS ONLY
```

C.
```
SELECT state, region, avg_income
  FROM census_data
  ORDER BY 3 DESC
  FETCH FIRST 5 ROWS
```

D.
```
SELECT state, region, avg_income
  FROM census_data
  ORDER BY 3 DESC
  FETCH FIRST 5 ROWS ONLY
```

69. (1 point) Which type of join will usually produce the smallest result set?

A. INNER JOIN
B. LEFT OUTER JOIN
C. RIGHT OUTER JOIN
D. FULL OUTER JOIN

70. (1 point) Which statement about SQL subqueries is NOT true?

A. A subquery can be used with an UPDATE statement to supply values for one or more columns that are to be updated.
B. A subquery can be used with an INSERT statement to retrieve values from one base table or view and copy them to another.
C. If a subquery is used with a DELETE statement and the result set produced is empty, every record will be deleted from the table specified.
D. If a subquery is used with an UPDATE statement and the result set produced contains multiple rows, the operation will fail and an error will be generated.

71. (1 point) Which statement about savepoints is NOT true?

    A. You can use as many savepoints as you desire within a single unit of work, provided you do not nest them.

    B. Savepoints provide a way to break the work being done by a single large transaction into one or more smaller subsets.

    C. The COMMIT FROM SAVEPOINT statement is used to commit a subset of database changes that have been made within a unit of work.

    D. The ROLLBACK TO SAVEPOINT statement is used to back out a subset of database changes that have been made within a unit of work.

72. (1 point) Which two statements about UPDATE processing are true? (Choose two.)

    A. A positioned UPDATE is used to modify one or more rows, and a searched UPDATE is used to modify exactly one row.

    B. A searched UPDATE is used to modify one or more rows, and a positioned UPDATE is used to modify exactly one row.

    C. When the UPDATE statement modifies parent key columns, the values of corresponding foreign key columns are modified as well.

    D. The UPDATE statement can be used to remove data from specified columns in the rows of a table, provided those columns are not nullable.

    E. The UPDATE statement can be used to modify the values of specified columns in the rows of a table, view, or underlying table(s) of a specified fullselect.

73. (1 point) A table named SALES has two columns: SALES_AMT and REGION_CD. Which SQL statement will return the number of sales in each region, ordered by number of sales made?

    A.
    ```
    SELECT sales_amt, COUNT(*)
      FROM sales
      ORDER BY 2
    ```

    B.
    ```
    SELECT sales_amt, COUNT(*)
      FROM sales
      GROUP BY sales_amt
      ORDER BY 1
    ```

    C.
    ```
    SELECT region_cd, COUNT(*)
      FROM sales
      GROUP BY region_cd
      ORDER BY COUNT(*)
    ```

    D.
    ```
    SELECT region_cd, COUNT(*)
      FROM sales
      GROUP BY sales_amt
      ORDER BY COUNT(*)
    ```

74. (1 point) A user wants to retrieve records from a table named SALES that satisfy at least one of the following criteria:

    - The sales date (SALESDATE) is after June 1, 2012, and the sales amount (AMT) is greater than $40.00.
    - The sales was made in the hardware department.

    Which SQL statement will accomplish this?

    A.
    ```
    SELECT * FROM sales
      WHERE (salesdate > '2012-06-01' OR (amt > 40
       AND (dept = 'Hardware')
    ```

    B.
    ```
    SELECT * FROM sales
      WHERE (salesdate > '2012-06-01') OR (amt > 40)
        OR (dept = 'Hardware')
    ```

    C.
    ```
    SELECT * FROM sales
      WHERE (salesdate > '2012-06-01' AND amt > 40
       AND (dept = 'Hardware')
    ```

    D.
    ```
    SELECT * FROM sales
      WHERE (salesdate > '2012-06-01' AND amt > 40)
       OR (dept = 'Hardware')
    ```

75. (1 point) Which two statements about INSERT operations are true? (Choose two.)

    A. The INSERT statement can be used to insert rows into a table, view, or table function.

    B. Inserted values must satisfy the conditions of any check constraints that have been defined on the table specified.

    C. The values provided in the VALUES clause of an INSERT statement are assigned to columns in the order in which they appear.

    D. If an INSERT statement omits any column from the inserted row that is defined as NULL or NOT NULL WITH DEFAULT, the statement will fail.

    E. If the underlying table of a view that is referenced by an INSERT statement has one or more unique indexes, each row inserted does not have to conform to the constraints imposed by those indexes.

76. (1 point) Which SQL statement should be used to select the minimum and maximum rainfall amounts (RAINFALL), by month (MONTH), from a table named WEATHER?

    A.
    ```
    SELECT month, MIN(rainfall), MAX(rainfall)
      FROM weather
      ORDER BY month
    ```

    B.
    ```
    SELECT month, MIN(rainfall), MAX(rainfall)
      FROM weather
      GROUP BY month
    ```

    C.
    ```
    SELECT month, MIN(rainfall), MAX(rainfall)
      FROM weather
      GROUP BY month, MIN(rainfall), MAX(rainfall)
    ```

    D.
    ```
    SELECT month, MIN(rainfall), MAX(rainfall)
      FROM weather
      ORDER BY month, MIN(rainfall), MAX(rainfall)
    ```

77. (1 point) An SQL function named REGIONAL_SALES was created as follows:

```
CREATE FUNCTION regional_sales()
RETURNS TABLE (region_id VARCHAR(20),
   sales_amt DECIMAL(8,2))
READS SQL DATA
BEGIN ATOMIC
RETURN
SELECT region, amt
FROM sales
ORDER BY region;
END
```

Which two statements demonstrate the proper way to use this function in a query? (Choose two.)

A. `SELECT * FROM regional_sales()`

B. `SELECT regional_sales (region_id, sales_amt)`

C. `SELECT region_id, sales_amt FROM regional_sales()`

D. `SELECT * FROM TABLE (regional_sales()) AS results`

E. `SELECT region_id, sales_amt FROM TABLE(region_sales()) AS results`

78. (1 point) If the following SQL statement is executed:

```
SELECT dept, AVG(salary)
 FROM employee
 GROUP BY dept
 ORDER BY 2
```

What will be the results?

A. The department number and average salary for all employees will be retrieved from a table named EMPLOYEE, and the results will be arranged in descending order, by department.

B. The department number and average salary for all departments will be retrieved from a table named EMPLOYEE, and the results will be arranged in ascending order, by department.

C. The department number and average salary for all employees will be retrieved from a table named EMPLOYEE, and the results will be arranged in ascending order, by average departmental salary.

D. The department number and average salary for all departments will be retrieved from a table named EMPLOYEE, and the results will be arranged in descending order, by average departmental salary.

79. (1 point) If a table named SALES contains information about invoices that do not have a negative balance, which two SQL statements can be used to retrieve invoice numbers for invoices that are for less than $25,000.00 ? (Choose two.)

    A. `SELECT invoice_num FROM sales WHERE amt < 25000`

    B. `SELECT invoice_num FROM sales WHERE amt < 25000`

    C. `SELECT invoice_num FROM sales WHERE amt LESS THAN 25000`

    D. `SELECT invoice_num FROM sales WHERE amt BETWEEN 0 AND 25000`

    E. `SELECT invoice_num FROM sales WHERE amt BETWEEN 0 AND 25000`

80. (1 point) An SQL function designed to convert miles to kilometers was created as follows:

```
CREATE FUNCTION mi_to_km (IN miles FLOAT)
  RETURN FLOAT
  LANGUAGE SQL
  SPECIFIC convert_mtok
  READS SQL DATA
  RETURN FLOAT (miles * 1.60934)
```

    How can this function be used to convert miles (MILES) values stored in a table named DISTANCES?

    A. CALL mi_to_km (distances.miles)

    B. CALL convert_mtok (distances.miles)

    C. SELECT mi_to_km (miles) FROM distances

    D. SELECT convert_mtok (miles) FROM distances

81. (1 point) Which two statements about system-period temporal tables are true? (Choose two.)

    A. They store user-based period information.

    B. They do not require a separate history table.

    C. They store system-based historical information.

    D. They can be queried without a time-period specification.

    E. They manage data based on time criteria specified by users or applications.

82. (1 point) A table named PARTS contains a record of every part that has been manufactured by a company. A user wishes to see the total number of parts that have been made by each craftsman employed at the company. Which SQL statement will produce the desired results?

    A. `SELECT name, COUNT(*) AS parts_made FROM parts`

    B. `SELECT name, COUNT(*) AS parts_made FROM parts GROUP BY name`

    C. `SELECT name, COUNT(DISTINCT name) AS parts_made FROM parts`

    D. `SELEC DISTINCT name, COUNT(*) AS parts_made FROM parts GROUP BY parts_made`

83. (1 point) Given an EMPLOYEES table and a DEPARTMENT table, a user wants to produce a list of all departments and employees who work in them, including departments that no employees have been assigned to. Which SQL statement will produce the desired list?

A.
```
SELECT employees.name, departments.deptname
FROM employees
INNER JOIN department ON
employees.dept = departments.deptno
```

B.
```
SELECT employees.name, departments.deptname
FROM employees
INNER JOIN department ON
departments.deptno = employees.dept
```

C.
```
SELECT employees.name, departments.deptname
FROM employees
LEFT OUTER JOIN departments ON
employees.dept = departments.deptno
```

D.
```
SELECT employees.name, departments.deptname,
FROM employees
RIGHT OUTER JOIN departments ON
employees.dept = departments.deptno
```

84. (1 point) Which statements are NOT allowed in the body of an SQL scalar user-defined function?

A. CALL statements

B. COMMIT statements

C. SQL CASE statements

D. SQL control statements

85. (1 point) A table named TABLE_A contains 200 rows and a user wants to update the 10 rows in this table with the lowest values in a column named COL1. Which SQL statement will produce the desired results?

A.
```
UPDATE
(SELECT * FROM table_a
  ORDER BY col1 ASC) AS temp
SET col2 = 99
FETCH FIRST 10 ROWS ONLY
```

B.
```
UPDATE
(SELECT * FROM table_a
  ORDER BY col1 DESC) AS temp
SET col2=99
FETCH FIRST 10 ROWS ONLY
```

C.
```
UPDATE
(SELECT * FROM table_a
  ORDER BY col1 ASC
 FETCH FIRST 10 ROWS ONLY) AS temp
   SET col2=99
```

D.
```
UPDATE
(SELECT * FROM table_a
  ORDER BY col1 DESC
  FETCH FIRST 10 ROWS ONLY) AS temp
SET col2 = 99
```

86. (1 point) Which statement best descirbes a transaction?

A. A transaction is a recoverable sequence of operations whose point of consistency is established only when a savepoint is created.

B. A transaction is recoverable sequence of operations whose point of consistency can be obtained by querying the system catalog tables.

C. A transaction is a recoverable sequence of operations whose point of consistency is established when a database connection is established or a savepoint is created.

D. A transaction is recoverable sequence of operations whose point of consistency is established when an executable SQL statement is processed after a database connection has been established or a previous transaction has been terminated.

87. (1 point) A table named TABLE_A contains 200 rows and a user wants to delete the last 10 rows from this table. Which SQL statement will produce the desired results?

A.
```
DELETE FROM
 (SELECT * FROM table_a
   ORDER BY col1 ASC
   FETCH FIRST 10 ROWS ONLY) AS result
```

B.
```
DELETE FROM
  (SELECT * FROM table_a
ORDER BY col1 ASC
FETCH LAST 10 ROWS ONLY) AS result
```

C.
```
DELETE FROM
    (SELECT * FROM table_a
      ORDER BY col1 ASC
      FETCH LAST 10 ROWS ONLY) AS result
```

D.
```
DELETE FROM
    (SELECT * FROM table_a
      ORDER BY col1 DESC
      FETCH LAST 10 ROWS ONLY) AS result
```

88. (1 point) Which clause could be added to the following SQL statement

```
SELECT student_id, enroll_date, gpa
 FROM students
```

to ensure that only information (STUDENT_ID, ENROLL_DATE, and GPA) for students who started school before 2012 and who have a GPA that is higher than 3.50 will be retrieved?

A. FOR enroll_date ¡'2012-01-01' OR gpa¿3.50

B. FOR enroll_date ¡'2012-01-01' AND gpa¿3.50

C. WHERE enroll_date ¡'2012-01-01' OR gpa¿3.5

D. WHERE enroll_date ¡'2012-01-01' AND gpa¿3.5

89. (1 point) Which statement correctly describes what a native SQL stored procedure is?

A. A procedure whose body is written entirely in SQL or SQL PL.

B. A procedure that is written in a high-level programming language such as Java or REXX.

C. A procedure whose body is written entirely in SQL, but that is implemented as an external program.

D. A procedure that accesses data using an Object Linking and Embedding, Database (OLE DB) provider.

90. (1 point) Given the following statements:

```
CREATE TABLE customer (custid INTEGER, custinfo XML);
INSERT INTO customer VALUES (100,
'<customerinfo>
  <name>ACME Manufacturing</name>
  <addr country="United States">
     <street>25 Elm Street</street>
 <city>Raleigh</city>
 <state>North Carolina</state>
 <zip>27603</zip>
  </addr>
</customerinfo>');
```

If the following XQuery statement is executed:

```
XQUERY
for $info in db2-fn:xmlcolumn('CUSTOMER.CUSTINFO')/customerinfo
return $info/name
```

What will be the result?

A. `ACME Manufacturing`

B. `<name>ACME Manufacturing</name>`

C. `<customerinfo>ACME Manufacturing</customerinfo>`

D. `<customerinfo><name>ACME Manufacturing</name></customerinfo>`

91. (1 point) Which two statements about roll back operations are correct? (Choose two.)

A. When a ROLLBACK statement is executed, all locks held by the terminating transaction are released.

B. When a ROLLBACK TO SAVEPOINT statement is executed, all locks acquired after the most recent savepoint are released.

C. When a ROLLBACK statement is executed, all locks acquired for open cursors that were declared WITH HOLD are held.

D. When a ROLLBACK TO SAVEPOINT statement is executed, all locks acquired up to the most recent savepoint are released.

E. When a ROLLBACK TO SAVEPOINT statement is executed, a savepoint is not automatically deleted as part of the rollback operation.

92. (1 point) Which SQL statement illustrates the proper way to perform a positioned update operation on a table named SALES?

A. `UPDATE sales SET amt = 102.45`

B. `UPDATE sales SET amt = 102.45 WHERE cust_id='000290'`

C. `UPDATE sales SET amt = 102.45 WHERE CURRENT OF cursor1`

D.
```
UPDATE sales SET amt = 102.45
WHERE ROWID = (SELECT ROWID FROM sales WHERE cust_id='000290')
```

93. (1 point) Which two statements about application-period temporal tables are true? (Choose two.)

A. They are useful when one wants to keep user-based time period information.

B. They consist of explicitly supplied timestamps and a separate associated history table.

C. They are useful when one wants to keep both user-based and system-based time period information.

D. They are based on explicitly supplied timestamps that define the time periods during which data is valid.

E. They consist of a pair of columns with database-manager maintained values that indicate the period when a row is current.

94. (1 point) When should the TRUNCATE statement be used?

    A. When you want to delete all rows from a table without generating log records.

    B. When you want to delete select rows from a table without generating log records.

    C. When you want to delete all rows from a table and fire any delete triggers that have been defined for the table.

    D. When you want to delete select rows from a table and fire any delete triggers that have been defined for the table.

95. (1 point) Which two commands will terminate the current transaction and start a new transaction boundary? (Choose two.)

    A. COMMIT

    B. REFRESH

    C. RESTART

    D. CONNECT

    E. ROLLBACK

96. (1 point) Which SQL statement should be used to retrieve the minimum and maximum annual temperature (TEMP) for each major city (CITY), sorted by city, from a table named WEATHER?

    A.
    ```
    SELECT city, MIN(temp), MAX(temp)
      FROM weather
      ORDER BY city
    ```

    B.
    ```
    SELECT city, MIN(temp), MAX(temp)
      FROM weather
      GROUP BY city
    ```

    C.
    ```
    SELECT city, MIN(temp), MAX(temp)
      FROM weather
      GROUP BY city
      ORDER BY city
    ```

    D.
    ```
    SELECT city, MIN(temp), MAX(temp)
      FROM weather
      GROUP BY MIN(temp), MAX(temp)
      ORDER BY city
    ```

97. (1 point) What is the XMLTABLE() function typically used for?

    A. To convert a well-formed XML document into a table of character string values.

    B. To obtain values from XML documents that are to be inserted into one or more tables.

    C. To parse a character string value and return a table of well-formed XML documents.

    D. To produce a temporary table whose columns are based on the elements found in a well-formed XML document.

5 Working with DB2 Tables, Views, and Indexes

98. (1 point) The following SQL statements were used to create a table and a unique index:

```
CREATE TABLE parts (part_cd INTEGER NOT NULL, part_desc VARCHAR(20));
CREATE UNIQUE INDEX indx1 ON parts (part_cd);
```

If the following ALTER statement is executed later:

```
ALTER TABLE parts ADD PRIMARY KEY (part_cd);
```

Which two events will take place? (Choose two.)

A. An error will be returned.

B. A warning will be returned.

C. Index INDX1 will become the index for the new primary key.

D. Index INDX1 will be marked invalid and will be rebuilt the next time it is accessed.

E. Index INDX1 will be dropped and a different index will be created for the primary key.

99. (1 point) Which statement about unqiue constraints is true?

A. A unique constraint can be used to ensure that a column will never be assigned a NULL value.

B. A unique constraint can be used to control which values will be accepted for a column in a table.

C. A unique constraint can be used to ensure that a column in a table will always be assigned a value.

D. A unique constraint can be used to ensure that a column in a table will never be assigned more than one NULL value.

100. (1 point) Which two statements regarding triggers are true? (Choose two.)

A. The triggered action (body) of a trigger cannot contain executable code.

B. Triggers cannot be modified; they must be dropped and recreated with new definitions.

C. Adding a trigger to a table that already has rows in it will cause triggered actions to be fired.

D. Triggers can only be fired one time per statement irrespective of the number of rows affected.

E. Triggers perform actions in response to an event such as an INSERT, UPDATE, or DELETE operation on a table.

101. (1 point) Which statement about primary key constraints is true?

A. Each primary key must have at least one corresponding foreign key.

B. Before a primary key can be created, a unique constraint must exist on the primary key's key columns.

C. A range partition must be defined on the key columns found in a primary key, immediately after the key is created.

D. A "unique and system-required" index will be created , if one doesn't exist, for a primary key's columns at the time the key is created.

102. (1 point) The following SQL statement was used to create a table named PARTS:

```
CREATE TABLE parts(
part_no        VARCHAR(10),
description    VARCHAR(50))
```

If values stored in the DESCRIPTION column are less than 36 characters in length, which SQL statement will successfully decrease the size of the DESCRIPTION column?

A. ALTER TABLE parts RESIZE COLUMN description 40

B. ALTER TABLE parts ADJUST COLUMN description VARCHAR(40)

C. ALTER TABLE parts ALTER COLUMN description SET DATA TYPE VARCHAR(40)

D. ALTER TABLE parts ALTER COLUMN description ALTER DATA TYPE VARCHAR(40)

103. (1 point) A table named SALES was created and populated using the following SQL statements:

```
CREATE TABLE sales (
invoice_no    VARCHAR(10) NOT NULL,
invoice_amt   DECIMAL(6,2) NOT NULL);

INSERT INTO sales VALUES ('2014-007', 102.90);
INSERT INTO sales VALUES ('2014-024', 82.50);
INSERT INTO sales VALUES (NULL, 224.37);
INSERT INTO sales VALUES ('', 0.0);
```

If the following query is executed:

```
SELECT count(*) FROM sales;
```

How many rows will be returned?

A. 1

B. 2

C. 3

D. 4

104. (1 point) When should an informational constraint be used?

A. When you want to ensure that a column will never be assigned a NULL value.

B. When you want to control which values can be assigned to a column in a table.

C. When you want to define a required relationship between select columns and tables.

D. When you want to tell the DB2 Optimizer that a parent-child relationship exists between two tables, but that the relationship is not enforced.

105. (1 point) What are two valid reasons for creating an index? (Choose two.)

A. To allow queries to run more efficiently.

B. To enforce CHECK and NOT NULL constraints.

C. To order the columns of a table in ascending or descending sequence according to values in a row.

D. To order the rows of a table in ascending or descending sequence according to the values in a column

E. To improve the performance of online transaction processing (OLTP) environments or environments where data throughput is high.