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 67 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

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)

   Explanation:

   Data warehouses (*Correct Answer C*) are typically used to store and manage large volumes of data that is often historical in nature and that is used primarily for analysis. Thus, a data warehouse could be used to identify sales patterns for products sold within the past three years or to summarize sales by region, on a quarterly basis. *InfoSphere Warehouse* is offered for data warehouse.

   Online transaction processing (OLTP) systems (*Answer D*), are designed to support day-to-day, mission-critical business activities such as web-based order entry and stock trading. *DB2 pureScale feature* is offered for OLTP workloads.

   Analytical workloads (*Answer A*) are better handled by a specialized product known as *DB2 for i and by IBM BLU Acceleration*, which is currently available only with DB2 10.5 for LUW.

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

   Explanation:

   IBM Data Studio (*Correct Answer A*) is an Eclipse-based, integrated development environment (IDE) that can be used to perform instance and database administration, routine (SQL procedure, SQL functions, etc.) and application development, and performance-tuning tasks. It replaces the *DB2 Control Center* (*Answer B*) as the standard GUI tool for DB2 database administration and application development.

   IBM Workload Manager, or WLM (*Answer D*) is a comprehensive workload management feature that can help identify, manage, and control database workloads to maximize database server throughput and resource utilization.

   There is **NO** such product as IBM Data Administrator (*Answer C*).

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

Explanation:

DB2 for i (*Answer A*), formerly known as DB2 for i5/OS, is an advanced, 64-bit Relational Database Management System that leverages the high performance, virtualization, and energy efficiency features of IBM's Power Systems; its self-managing attributes, security, and built-in analytical processing functions make *DB2 for i* an ideal database server for applications that are analytical in nature.

DB2 for z/OS (*Correct Answer C*) is a multiuser, full-function database management system that has been designed specifically for z/OS, IBM's flagship mainframe operating system. Tightly integrated with the IBM mainframe, *DB2 for z/OS* leverages the strengths of System z 64-bit architecture to provide, among other things, the ability to support complex data warehouses.

In addition to DB2 for z/OS, all of the DB2 Editions available **except** *DB2 Express-C* (*Answer E*) and *DB2 Express Edition* can be used to create data warehouse and OLTP environments. **However**, IBM offers two solutions that are tailored specifically for one workload type or the other: *InfoSphere Warehouse* for data warehousing workloads and the *DB2 pureScale Feature* (*Answer D*) for OLTP workloads.

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.

Explanation:

IBM InfoSphere Optim Performance Manager Extended Edition can be used to identify, diagnose, solve, and prevent performance problems in DB2 products and associated applications (*Answer A*)

With *DB2 Workload Manager*, it is possible to customize execution environments so that no single workload can control and consume all of the system resources available. (This prevents any one department or service class from overwhelming the system.) (*Correct Answer B*)

The *Self-Tuning Memory Manager (STMM)* responds to significant changes in a database's workload by dynamically distributing available memory resources among several different database memory consumers. (*Answer C*)

The *Connection Concentrator* improves 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. (*Answer D*)

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

Explanation:

Sub-second response time is a feature of OLTP systems.

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.

Explanation:

The *DB2 pureScale feature* is included as part of *DB2 Workgroup Server Edition (WSE)*, *DB2 Enterprise Server Edition (ESE)*, and *DB2 Advanced Enterprise Server Edition (AESE)*.

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.

Explanation:

A LOB locator is a mechanism that refers to a LOB value from within a transaction. LOB locator is **NOT** a data type (*Answer C*), nor is it a database object. Instead, it is a token value-in the form of a host variable-that is used to refer to a much bigger LOB value.

LOB data types-**not LOB locators**-are used to store binary data values in a DB2 database *Answer D*.

LOB locators **do not** store copies of LOB data (this is make it different from index)-they store a description of a base LOB value, and the actual data that a LOB locator refers to is only materialized when it is assigned to a specific location, such as an application host variable or another table record (*Answer E*)

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)

Explanation:

An online transaction processing (OLTP) environment often consists of hundreds to thousands of users issuing millions of transactions per day against databases that vary in size. Consequently, the volume of data affected may be very large, even though each transaction typically makes changes to only a small number of records.

Data warehousing (*Answer B*) involves storing and managing large volumes of data that is often historical in nature and that is used primarily for analysis. Consequently, data warehouses are frequently used in reporting, online analytical processing (OLAP) (*Answer C*), and decision support (*Answer A*) environments.

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

Explanation:

Data warehouse workloads typically consist of:

- bulk load operations
- short-running queries
- long-running complex queries
- random queries
- occasional updates to data
- execution of online utilities

Therefore, data warehouses are optimized for queries (*Correct Answer D*).

Online transaction processing (OLTP) systems features:

- Support day-to-day, mission-critical business activities
- Support hundreds to thousands of users issuing millions of transactions per day (*Answer C*) against databases that vary in size
- Response time requirements tend to be subsecond
- Workloads tend to be a mix of real-time insert, update (*Answer B*), and delete operations against current-as opposed to historical-data (*Answer A*)

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

Explanation:

DB2 pureScale (Version 10.1) can **ONLY** be installed on IBM p Series or x Series servers that are running either the AIX (p Series) or the Linux (x Series) operating system.

DB2 pureScale **CANNOT** be installed on IBM mainframes running z/OS (*Answer A*), IBM p Series servers running Linux (*Answer C*), or IBM x Series servers running Windows (*Answer E*).

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

Explanation:

IBM InfoSphere Data Architect offers a complete solution for designing, modeling, discovering, relating, and standardizing data assets (*Answer A*).

IBM InfoSphere Optim Query Tuner, often referred to as the Query Tuner, can analyze and make recommendations on ways to tune existing queries, as well as provide expert advice on writing new queries (*Correct Answer B*).

IBM InfoSphere Optim pureQuery Runtime bridges the gap between data and Java technology by harnessing the power of SQL within an easy-to-use Java data access platform (*Answer C*).

IBM InfoSphere Optim Performance Manager Extended Edition can identify, diagnose, solve, and prevent performance problems in DB2 products and associated applications (*Answer D*).

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)

Explanation:

The *DB2 pureXML* offers a simple and efficient way to create a "hybrid" DB2 database that allows XML data to be stored in its native, hierarchical format. With *pureXML*, XML documents are stored in tables that contain one or more columns that have been defined with the XML data type.

Since the XML data type does not require a size specification (*Answer B*), and because "CLOB AS XML" (*Answer C*) and "CLOB USING XML" (*Answer D*) are not valid column definitions, the only CREATE TABLE statement shown that will execute successfully is:

```
CREATE TABLE employee (empid INT, resume 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

Explanation:

DB2 pureScale Feature enables a DB2 for LUW database to continuously process incoming requests, even if multiple system componets fail simultaneously, which makes it ideal for OLTP workloads where high availability is crucial (*Answer A*).

DB2 Workload Manager (WLM) is a comprehensive workload management feature that can help identify, manage, and control database workloads to maximize database server throughput and resource utilization (*Answer B*).

IBM InfoSphere Warehouse is a complete data warehousing solution that contains components that facilitate data warehouse construction and administration, as well as tools that enable embedded data mining and multidimensional online analytical processing (OLAP) (*Correct Answer C*).

Data Partitioning Feature (DPF) provides the ability to divide very large databases into multiple parts (known as partitions) and store them across a cluster of inexpensive servers (*Answer D*).

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.

Explanation:

There are three different IBM Data Studio components to choose from: *IBM Data Studio administration client*, *IBM Data Studio full client*, and *IBM Data Studio web console*. All three components can be installed on servers running Red Hat Linux, SUSE Linux, and Windows; IBM Data Studio web console can be installed on servers running the AIX operating system as well. (**IBM Data Studio administration client cannot be installed on AIX servers**).

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.

Explanation:

By default, Large object (LOB) data is stored in separate LOB storage objects and changes to LOB data are not recorded in transaction log files. However, LOBs that are relatively small can be stored in the same data pages as the rest of a table's rows-such LOBs are referred to as *inline LOBs*, and transactions that modify inline LOB data are always logged. Consequently, the use of inline LOBs can increase-**not reduce**-logging overhead.

Inline LOBs are created by appending the INLINE LENGTH clause to a LOB column's definition (*Answer B*), which can be specified via the `CREATE TABLE` or `ALTER TABLE` statement. Inline LOBs improve the performance of queries that access LOB data since no additional I/O is needed to access this type of data (*Answer D*). However, when a table has columns with inline LOBs in it, fewer rows will fit on a page (*Answer A*).

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.

    Explanation:

    - *Answer A* IMPLICIT_SCHEMA database privilege
    - *Answer B* ACCESSCTRL
    - *Answer D* DBMAINT

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

    Explanation:

    No APPLICATION database objects (or related privileges)

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.

Explanation:

- *Answer A* INSERT table privilege
- *Answer D* INDEX table privilege
- *Answer E* ALTER table privilege

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`

Explanation:

No "REMOVE" table privilege and "WITH GRANT PRIVILEGES" clause

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.

Explanation:

- *Answer A* BINDADD table privilege
- *Answer C* CREATE_EXTERNAL_ROUTINE table privilege
- *Answer D* No such authority or privilege exists

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.

Explanation:

- *Answer A* CAN access data stored in system catalog tables and views; CANNOT access user data
- *Answer C* Individuals who possess SECADM CANNOT create databases
- *Answer D* CAN separate: set the SEPARATE_SECURITY system parameter on panel DSNTIPP1 to YES during installation or migration

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.

Explanation:

- *Answer A* can ONLY be defined by SECADM
- *Answer B* An authentication type is NOT needed to define a trusted context
- *Answer D* any authorities or privileges that have been granted to the authorization ID are NOT ignored. (DB2 z/OS extended trusted context)

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`

> **Explanation:**
>
> SYSADM (*Answer A*), SECADM (*Answer B*), and ACCESSCTRL (*Answer D*) are system-level and database-level authorities-not object privilege. Consequently, they can only be granted by SECADM.

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

> **Explanation:**
>
> Server is the key word in this question.

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

Explanation:

Only one table space privilege exists-the USE (or USE OF TABLESPACE) privilege

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`

Explanation:

sequence only has two privileges - USAGE (**NOT** use) & ALTER. ALTER privilege allows user to

- restarting the sequence
- changing the increment value for the sequence
- add or change the comment associated with a sequence

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.

Explanation:

- *Answer A* No such thing as a "restricted" role
- *Answer B* ACCESSCTRL does not have ability to retrieve data
- *Answer C* Objects such as tables, views, and index can be stored in different schemas, but individual table columns cannot. And even if they could, there is no privilege that can be used to prevent certain individuals from accessing objects that have been stored in a particular schema

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.

Explanation:

- *Answer A* Three types of security label components are supported: SET, ARRAY and TREE
- *Answer C* To configure a table for row-level LBAC protect, you must associate a security policy with the table (using the SECURITY POLICY clause of the CREATE TABLE or ALTER TABLE statement) and *include a column with the data type in the table's definition*
- *Answer D* To configure a table for column-level LBAC protect, you must associate a security policy with the table and *configure each of the table's columns for protection by adding the SECURED WITH clause to every column's definition*
- *Answer C* and *D* are incorrect because they state just the opposite

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. `EXECUTE`

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.

Explanation:

views can be defined as being *insertable*, updatabale, *deletable*, or read-only.

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.

Explanation:

Distinct types cannot be used as arguments for most built-in functions, and built-in data types cannot be used in arguments or operands that expect distinct data types. Instead, user-defined functions (UDFs) that provide similar functionality must be developed if that capability is needed.

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.

Explanation:

- *Answer D* Because index do not physically change the order of records in a table, queries that do not take advantage of index will return rows from a table in no specific order (To be more concise, **cluster** clause not specified in `CREATE UNIQUE INDEX` statement)
- *Answer E* Because ORDER_NUM column was not defined as a primary key in the scenario presented, the index produced by the CREATE INDEX statement shown will *not* serve as the primary key index 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.

    Explanation:

    - *Answer A* To implement distributed request functionality, you need *a DB2 Connect instance*, a database that will serve as a federated database, and one or more remote data sources.

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.

    Explanation:

    An index is an object that contains pointers to rows in a table that are *logically* ordered according to the values of one or more columns (known as keys). Special index known as *clustering* index can cause the rows of a table to be physically arranged according to the ordering of their key column values, but such index are not created automatically.

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.

Explanation:

- *Answer A* Multidimensional clustering tables (MDC)
- *Answer C* Declared global temporary tables
- *Answer D* application-period temporal tables

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.

Explanation:

- A primary key (*Answer C*) or unique index (*Answer D*) does not have to be included in the definition provided for a system-period temporal table.
- *Answer E* transaction-end-id column is not needed (nor recognized by DB2)

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

    Explanation:

    Since views do not contain data, they cannot be enabled for compression.

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.

    Explanation:

    - *Answer A* Alias
    - *Answer C* Sequence
    - *Answer D* View

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.

Explanation:

- *Answer A* system-period temporal table
- *Answer C* insert time clustering (ITC) tables
- *Answer D* multidimensional clustering (MDC) tables

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

Explanation:

When table spaces, tables, index, *distnct data types*, functions, stored procedures, and triggers are created, they are automatically assigned to (or defined into) a schema, based upon the qualifier that was provided as part of the user-supplied name.

58. (1 point) Which two objects can NOT be created in DB2? (Choose two.)

A. Plan
B. Trigger
C. Scheme
D. Function
E. Sequence

Explanation:

- *Answer A* While packages can contain data access plans that were implicitly created, there is no way to explicitly create a data access plan.
- *Answer C* There is no such thing as a "scheme" object, scheme objects cannot be explicitly created.

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.

Explanation:

- *Answer A* Type 2 connections can be used with DB2 for z/OS
- *Answer B* Type 1 connections are used by default with DB2 LUW; Type 2 connections are used by default with DB2 z/OS.
- *Answer C* Type 2 connections allow a single transaction to connect to and work with multiple 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.

Explanation:

- *Answer A* Bitemporal tables are user tables, NOT system tables.
- *Answer C* Created by executing a CREATE TABLE statement with both the PERIOD SYSTEM_TIME clause and the PERIOD BUSINESS_TIME clause specified.
- *Answer D* No "bitemporal-time-begin" and "bitemporal-time-end" columns exist.

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.

Explanation:

- *Answer A* trigger
- *Answer B* UDF
- *Answer C* sequence

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."

Explanation:

When the simplest form of the CREATE DATABASE command is executed, the database will be

- an automatic storage database
- have a page size of 4 KB
- be created on the default database path that is specified in the *dftdbpath* database manager configuration parameter
- default table spaces (SYSCATSPACE, TEMPSPACE1, and USERSPACE1) will be automatic storage table spaces (Their containers will also be created on the default database path.)

- *Answer B* PAGESIZE 8192 option
- *Answer C* AUTOMATIC STORAGE NO option
- *Answer D* WITH "PAYROLL DATABASE" option

Working with DB2 Data Using SQL