

Unit 1: Database Environment

Short Questions

1. How db2 environment is controlled?
2. Enlist four types of profile registry.
3. Which registry is set to make settings for particular instance?
4. Name the registry which is used to over-ride global level settings.
5. What is referred as instance profile registry?
6. List out four parameters which can be set in DB2 registry.
7. What information does registry contains?
8. Give one example of making change in registry.
9. How to stop and start the instance using a single line command?
10. How many instance does a database is attached at a time?
11. How many instances can be created or are possible to create on a single server?
12. Define DB2 instance.
13. How many DAS instance can reside on a single machine?
14. Define Runtime client.
15. Define db2 client.
16. List different types of database directories.
17. Differentiate between system database directory and local database directory.
18. State the command to catalog tcp/ip node.
19. Write syntax to catalog a database.

Long Questions

1. List steps to install a typical setup of DB2 9.7.
2. Explain DB2 Profile Registry.
3. Differentiate settings of Global level profile registry and Instance level profile registry giving two points.
4. Distinguish two key points settings of Instance level profile registry and Global level profile registry.
5. How to modify registry and environment variables? Explain with example.
6. What is Quiescing and Unquiescing an Instance with example.
7. Write commands and Registry variables of Profile Registry.
8. Explain the task carried out by the DB2 tools using DAS.
9. Write a note on ATTACH instance command.
10. Explain implicit attachment and explicit attachment.
11. State the hierarchy of db2 environment for setting variables.
12. How to start and stop the Instance? Explain in detail.
13. Explain four types of client in DB2.
14. State the steps for discovering other database.
15. Explain the steps to add database connection using the configuration assistant.
16. What is Command line processor? Explain its modes in detail.

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17. Explain different types of database directories.
18. Write two differences between command line editor and command line processor.
19. What is DB2 discovery? Give description of important parameters related to it.
20. Note steps for automated Configuration of database connection from client to server using access profiles.
21. How to configure client server connections using command line Processor?
22. What is cataloging? Explain how to catalog tcp/ip node.
23. How to catalog a database? State the purpose for cataloging database.

Multiple Choice Questions

1. Which of the following commands start a default instance named DB2INST1?
 - a. START db2inst1
 - b. START DB MANAGER
 - c. Db2start | db2inst1
 - d. START DBMGR
2. Which of the following commands will assign the value TCPIP to the variable DB2COMM for all instances on a DB2 server?
 - a. db2set DB2COMM=TCPIP
 - b. db2set -g DB2COMM=TCPIP
 - c. db2set -all DB2COMM=TCPIP
 - d. set DB2COMM=TCPIP
3. If the following command is executed:
 db2set DB2Comm=
 What will happen?
 - a. The value assigned to the DB2Comm registry variable will be displayed.
 - b. A list of communications protocols that are recognised by the server will be assigned to the DB2COMM registry variable.
 - c. The value assigned to the global DB2Comm variable will be copied to the DB2COMM registry variable for the default instance.
 - d. The DB2COMM level variable for the default instance will be deleted.
4. Which of the following commands can be used to obtain information about how memory has been allocated for a database named SAMPLE?
 - a. GET DB CFG FOR sample SHOW DETIAL
 - b. GET MEMORYUSAGE FOR sample
 - c. GET DBM CFG
 - d. GET CFG DETAILS FOR sample
5. Which of the following DB2 Database Manager configuration parameter is used to control the maximum number of applications that can be executing concurrently in an instance?
 - a. NUM_INITAGENTS
 - b. MAXCAGENTS
 - c. MAX_COORDAGENTS
 - d. MAXAGENTS

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6. Assuming sufficient memory is available, when will the changes take place?
 - a. The next time the instance is stopped and restarted.
 - b. The next time the SAMPLE database is stopped and restarted.
 - c. Immediately after the commands are executed.
 - d. The changes will not take place because the database was not placed in quiesce mode first.
7. A database administrator successfully changes the value of the SORTHEAP database configuration parameter while a running application is accessing the database. When will the application see the effects?
 - a. When a new SQL statement is executed.
 - b. When a new transaction is started.
 - c. When a new database connection is established.
 - d. When the application terminates and is restarted.
8. After running the AUTOCONFIGURE command, a database administrator noticed that the SORTHEAP database configuration parameter for a database named SAMPLE had not been set to AUTOMATIC, even though the SELF_TUNING_MEM CONFIGURATION parameter had been set to ON.
 In order to get the desired results, which of the following commands must be executed before the AUTOCONFIGURE command is run again?
 - a. UPDATE DBM CFG USING SHEAPTHRES 0
 - b. UPDATE DB CFG FOR sample USING SHEAPTHRES_SHR AUTOMATIC
 - c. UPDATE DBM CFG USING SHEAPTHRES AUTOMATIC
 - d. UPDATE DB CFG FOR sample USING SHEAPTHRES_SHR 0
9. A database server has one instance named DB2INST1 and two databases named SALES and PAYROLL. Which of the following commands will allow the DB2INST1 instance and the SALES database, but prevent the PAYROLL database from being seen by DB2 Discovery?
 - a. UPDATE DBM CFG USING DISCOVER_INST SEARCH;
 UPDATE DB CFG FOR sales DISCOVER_DB SEARCH;
 UPDATE DB CFG FOR payroll USING DISCOVER_DB DISABLE;
 - b. UPDATE DBM CFG USING DISCOVER_INST ENABLE;
 UPDATE DB CFG FOR sales DISCOVER_DB ENABLE;
 UPDATE DB CFG FOR payroll USING DISCOVER_DB DISABLE;
 - c. UPDATE DBM CFG USING DISCOVERY SEARCH;
 UPDATE DB CFG FOR sales DISCOVER_DB ENABLE;
 UPDATE DB CFG FOR payroll USING DISCOVER_DB DISABLE;
 - d. UPDATE DB CFG FOR sales DISCOVERY ENABLE;
 UPDATE DB CFG FOR sales DISCOVER_DB ENABLE;
 UPDATE DB CFG FOR payroll USING DISCOVER_DB DISABLE;
10. WHICH of the following activities can NOT be performed with Automatic Maintenance?
 - a. Database-level backups
 - b. Snapshot monitoring

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- c. Statistics collection and statistics profiling
- d. Table and index reorganization
- 11. Which of the following is the lowest cost DB2 product that can be legally installed on a Windows server that has 2 CPUs?
 - a. DB2 Everyplace
 - b. DB2 Express Edition
 - c. DB2 Workgroup Server Edition
 - d. DB2 Enterprise Server Edition
- 12. Which of the following is the lowest cost DB2 product that can be legally installed on a Linux server that has 6 CPUs?
 - a. DB2 Express Edition
 - b. DB2 Personal Edition
 - c. DB2 Workgroup Server Edition
 - d. DB2 Enterprise Server Edition
- 13. Which two of the following authorities allow a user to create a new database?
 - a. SYSADMN
 - b. SYSCTRL
 - c. SYSMANT
 - d. DBADM
 - e. CREATEDB
- 14. Which of the following DB2 tools allows a user to set DB2 registry parameters?
 - a. Task Center
 - b. Visual Explain
 - c. Configuration Assistant
 - d. Satellite Administration Center
- 15. Which of the following tools can be used to automate table reorganization operations?
 - a. Control Center
 - b. Command Center
 - c. Command Line Processor
 - d. Task Center
- 16. Which two of the following allow you to perform administrative tasks against database objects?
 - a. Control Center
 - b. Journal
 - c. Command Line Processor
 - d. Task Center
 - e. Health Center
- 17. Which of the following tools can be used to catalog a database?
 - a. Visual Explain
 - b. Alert Center
 - c. Journal

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- d. Configuration Assistant
18. Which authority or privilege is granted by the DB2 Database Manager configuration file?
- CONNECT
 - CONTROL
 - SYSMAINT
 - EXECUTE
19. Which two of the following authorities allow a user to create a new database?
- SYSADMN
 - SYSCTRL
 - SYSMAINT
 - DBADM
 - CREATEDB
20. Where are changes made by the Self-tuning Memory Manager recorded?
- In memory tuning log file
 - In the DB2 diagnostics Log file
 - In the Administration Notification Log
 - In the Journal
21. Which of the following commands will start a default instance named DB2INT1?
- START db2inst1
 - START DB MANAGER
 - db2start | db2inst1
 - START DBMGR

True or False

- The DAS on the server must be running and the DISCOVER configuration parameter for the DAS must be set to KNOWN or SEARCH.
- The following command will recommend and make configuration changes for an instance named DB2INST1.
AUTOCONFIGURE USING mem_percent 60 APPLY DBM ONLY
- The following command can be used to obtain information about how memory has been allocated for the database named SAMPLE.
GET DB CFG FOR sample SHOW DETAIL
- The DB2COMM registry level variable for the default instance will be deleted using the following command.
Db2set DB2COMM
- A DB2 server contains two instances named TEST and PROD. The instance named TEST is the default instance.
Db2set DB2_INSTANCE=prod command must be executed before an attempt is made to start the instance named PROD.
- Command Line Processor tool can be used to automate table reorganization operations.
- The DB2 Database Manager configuration and database configuration parameters control how system resources are allocated for instances and database, known as DAS configuration.

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8. The DB2 database Manager updates the system catalog statics on the data in a table, the data in a table's indexes, or the data in both a table and its indexes.
9. The DB2 Instance Node-Level Profile Registry contains variable setting that are specific to a partition(node) in a multipartitioned database environment.
10. If an environment variable is to be set for all instance, then DB2 Global level profile registry is used.
11. Instances and databases can removed from quiesced mode by executing the REMOVE INSTANCE command.
12. You can stop DB2 Database Manager background processes by executing the command STOP DB2 MANAGER.
13. The default instance for a system is defined by the DB2INST environment variable.
14. When any edition of DB2 installed on a workstation, program files for a background process known as DB2 Database Manager.
15. Multiple instances is created to separate your development environment from your production environment.
16. Each DB2 Database Manager configuration file is made up of approximately 75 different parameter values, and most control the amount of system resources that are allocated to all DB2 Database Manager instance.
17. The administrative node directory contains one definitions for each remote system that is known to a DB2 client.
18. Database connections are independent of instance attachments.
19. A database connection can only be implicit.
20. A DB2 instance can be defined as a logical database server environment.

Fill in the blanks

1. _____ command is used to display the contents of the DAS instance configuration file.
2. DB2Instatnce is the value stored in the _____ environment variable.
3. _____ DB2 database Manager Configuration parameters is used to control the maximum no. of applications that can be executing concurrently in an instance.
4. _____ DB2 tools allows a user to set DB2 registry parameters.
5. _____ is the lowest cost DB2 product that can be legally installed on a Linux server that has 6 CPUs.
6. _____ command is provide the short description of the options available.
7. The values assigned to all DAS instance configuration file parameters can be returned to their system defaults by executing the _____ command.
8. _____ allows you to easily catalog a remote server and database without having to know any detailed communication-specific information.
9. The DB2COMM registry variable is assigned the value TCP/IP by executing a _____ command.
10. The _____ is designed to capture specific information about your database environment and recommend or make changes to configuration parameters base on the information provided.
11. The DB2 global-level profile registry variable _____ contains the name of the DAS instance that has been defined for a particular workstation.
12. In _____ discovery method by passing target data server's host name, DB2 will automatically

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return the instances and databases.

13. _____ discovery method is used to search the network for data server's, DB2 will automatically return the instances and databases.
14. _____ variable specifies the active db2 instance.
15. _____ is the name of the node configuration file.
16. The administrative group must be defined in the instance configuration file known as the _____ file.
17. Registry variables are can be set using _____ command.
18. A single application can maintain _____ database connections at the same time.
19. _____ command is used to get the information of currently active instance.
20. Each database clients maintains a _____ directory.

Unit 2: Database Objects

Short Questions

1. How many types of built-in data types exists in DB2?
2. Which six data types are used to store numeric data?
3. How does CHAR differs from VARCHAR?
4. List all string data types.
5. Name the date and time data types exist in DB2.
6. List the valid date formats.
7. List the valid time formats
8. What is an external file data type?
9. What does DATALINK value contains?
10. What is XML?
11. How many types of UDT's are there and which are they?
12. Which catalog view allows to see the UDT's that have been defined in the database?
13. Define Identity column.
14. How can we create a UCS-2 database(Unicode database)?
15. Which types of constraints can be applied on a table in DB2?
16. How many types of permanent tables are there in DB2?
17. List five information contained in the system catalog tables.
18. What is the purpose of compressed table?
19. Compressing data within a table requires three steps. Which are they?
20. What is the purpose of INSPECT command?
21. What modifications are possible through ALTER TABLE statement?
22. What is range clustered table(RCT)?
23. Why RCT is desirable?
24. List the drawbacks of RCT.
25. What is a view?
26. What is an index?
27. What is a unique index?
28. Maximum how many columns can be considered for an index key ?

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29. How many maximum indexes are allowed on a table?
30. What is a Bi-directional Index?
31. What is Design Advisor and how it can be invoked?
32. Give a difference between primary/unique key constraint and unique index.
33. How can we determine the compressing settings on a table?

Long Questions

1. Explain Index only access and Bi-directional index.
2. If a table space name is not specified explicitly when creating a table, how does DB2 determines the table space for it?
3. Explain Views with Check Option.
4. Describe the drawbacks of using RCT.
5. Explain KEEPDICTIONARY behavior.
6. Explain RESETDICTIONARY behavior.
7. How INSPECT command can help in generating compression dictionary?
8. Explain ROW Compression with an appropriate example.
9. Explain Value compression. Give an example for the same.
10. What the purpose is of NOT LOGGED INITIALLY option of CREATE TABLE? Explain.
11. Explain System Catalog Tables.
12. Write a note on User tables.
13. What is referential integrity? Explain the referential integrity rules in detail.
14. Explain Unique Constraints.
15. How Unicode is supported in DB2?
16. Explain Identity columns. Give an example for the same.
17. Write a note on User-defined data types.
18. Write a note on Date and Time data types.
19. Explain String data types.
20. Explain numeric data types.

Multiple Choice Questions

1. In order to use data row compression with a table, which of the following must exist?
 - a. A compression index
 - b. A compression dictionary
 - c. A user-defined compression algorithm
 - d. A table that only contains character data type columns

2. Which two of the following utilities can be used to create a compression dictionary?
 - a. reorg
 - b. db2pd
 - c. inspect
 - d. runstats
 - e. db2buildcd

3. Which of the following options can be used with the REORG command to construct a new compression dictionary before compressing data stored in a table?
 - a. KEEPDICTIONARY

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- b. RESETDICTIONARY
 - c. GENERATEDICTIONARY
 - d. NEWDICTIONARY
4. Which of the following is not valid when discussing data row compression?
- a. Data row compression can lead to disk I/O savings and improved buffer pool hit ratios.
 - b. Compressing data at the row level is advantageous because it allows repeating patterns that span multiple columns within a row to be replaced with shorter symbols.
 - c. Data row compression for a table can be enabled by executing the ALTER TABLE statement with the COMPRESS YES option specified.
 - d. Only data in a table enabled for data row compression is compressed data in corresponding indexes and transaction logs is not compressed.
5. Which of the following is NOT a true statement about range-clustered tables?
- a. RCT requires less buffer cache because they rely on a special index for organizing data.
 - b. Storage for RCT must be pre-allocated and available when the table is created.
 - c. RCT can result in significant performance advantages during query processing because fewer I/O operations are needed.
 - d. RCT are created by specifying the ORGANIZE BY KEY SEQUENCE clause with a CREATE TABLE statement.
6. Which of the following is not true about schema objects
- a. After connecting to a new database, all users who have successfully authenticated with the server have the ability to create a new schema.
 - b. Like table spaces, schemas are used to physically group and store objects in a database.
 - c. If a schema is explicitly created with the CREATE SCHEMA statement, the schema owner is granted with CREATEIN, DROPIN and ALTERIN privileges on the schema, as well as the ability to grant these privileges to other users.
 - d. Ownership of a schema that is explicitly created can be assigned during the creation process.
7. A user USER1 connects to a database by supplying following command:
CONNECT TO mysample USER db2admin USING dbpass;
After connection establishment, USER1 creates a table Test_tab by supplying following command:
CREATE TABLE Test_tab(col1 INTEGER, col2 CHAR(12));
In which schema, Test_tab got created?
- a. ROOT
 - b. DB2INST1
 - c. USER1
 - d. DB2ADMIN
8. CREATE TABLE mytab(c1 INTEGER NOT NULL, c2 VARCHAR(20) NOT NULL, c3 VARCHAR(30))
What additional command will ensure that column C1 has unique values?
- a. CREATE CONSTRAINT myinx ON TABLE mytab(c1) UNIQUE
 - b. CREATE UNIQUE INDEX myinx ON TABLE mytab(c1)
 - c. CREATE INDEX myinx ON TABLE mytab(c1)

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- d. CREATE INDEX myinx ON TABLE mytab
- 9. What are informational constraints used for?
 - a. To influence DB2 Optimizer data access plan selection without slowing down DML operations
 - b. To provide information to an application about any constraints that have been defined
 - c. To define non-checked primary keys
 - d. To influence DB2 Optimizer
- 10. Which of the following CREATE VIEW statement will ensure that every attempt to insert or update a record in table T1 via the view V1 must pass one criteria before the row can be inserted/update?
 - a. CREATE VIEW V1 as SELECT c1,c2 FROM t1 WHERE c1<100
 - b. CREATE VIEW V1 as SELECT c1,c2 FROM t1 WHERE c1<100 ENFORCED
 - c. CREATE VIEW V1 as SELECT c1,c2 FROM t1 WHERE c1<100 WITH VALIDATION
 - d. CREATE VIEW V1 as SELECT c1,c2 FROM t1 WHERE c1<100 WITH LOCAL CHECK OPTION
- 11. Which of the following best describes the function of the db2is command?
 - a. It retrieves information about the DB2 products that have been installed on a particular server.
 - b. It locks a DB2 system and limits access to users who hold System Administrator authority
 - c. It generated a list of all remote servers that have been cataloged on a client workstation
 - d. It returns the location of the system catalog for a particular database
- 12. Given the following CREATE TABLE statement:
 Create Table department
 (deptid Integer, deptname char(25), budget numeric(12,2))
 Which of the following statements prevents two departments from being assigned the same DEPTID, but allows null values?
 - a. ALTER TABLE department Add constraint dpt_cst PRIMARY KEY(deptid)
 - b. Create index dpt_idx ON department(deptid)
 - c. ALTER TABLE department Add constraint dpt_cst UNIQUE (deptid)
 - d. Create unique index dpt_idx ON department(deptid)
- 13. When database is created without any table space options, which among the following are not created by default?
 - a. SYSCATSPACE
 - b. TEMPSPACE1
 - c. USERSPACE1
 - d. GLOBALTEMPSPACE
- 14. To create temporary table, following statement is used
 - a. CREATE
 - b. DERIVE
 - c. DECLARE
 - d. SET
- 15. To create an identity column, following clause is used in CREATE TABLE statement
 - a. IDENTITY
 - b. GENERATED IDENTITY
 - c. GENERATED IDENTITY ALWAYS
 - d. GENERATED AS ALWAYS IDENTITY

TRUE OR FALSE:

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1. Each database has only one log file associated with it.
2. There is no support of SAVEPOINTS in DB2.
3. DB2 defines IBMDEFAULTBP default buffer pool for the database.
4. SYSCAT.BPOOLS catalog view accesses the information for the buffer pools defined in the database.
5. DECLARE statement is used to create temporary tables in an application.
6. USERSPACE1 contains the user tables and user temporary tables.
7. GRAPHIC is a String data type.
8. User defined data types can only be based on existing DB2 data types.
9. User defined reference type are also known as user defined structured data type.
10. SYSCAT.DATATYPES catalog view allows to see the UDTs defined in the database.
11. Check constraints are referential integrity constraints.
12. If the data to be stored is of fixed length, VARCHAR is data type that should be used.
13. A check constraint can be dropped and recreated through one ALTER TABLE command.
14. System catalog does not include object dependencies.
15. NOT LOGGED INITIALLY option of CREATE TABLE statement avoids the overhead of logging data.
16. COMPRESS YES is used to turn on VALUE compression.
17. Through ALTER TABLE, columns can be renamed for that table.
18. Through ALTER TABLE, columns can be altered for that table.
19. The size of the RCT can be altered through ALTER TABLE command.
20. RCTs are best for those tables that are frequently used I applications but do not grow in size.

FILL IN THE BLANKS:

1. ___ table space contains temporary tables used by DB2.
2. A user-defined reference type is a companion type to a ___ type.
3. Most database objects are named using a two-part naming convention (____.____).
4. ___ is a default table space type.
5. ___ are the database objects use to cache data pages in memory.
6. A ___ is a sequence of SQL statements that execute as a single operation.
7. The ___ are released when the resource is no longer required at the end of the transaction.
8. As the transaction processes, it is tracked within a ___ file.
9. DB2 uses ___ logging for database recovery.
10. ___ table space contains the user tables unless other user table spaces are created.
11. To create a temporary table, ___ statement is used.
12. ___ statement is used to delete objects from the database.
13. An INTEGER takes ___ as much storage as a SMALLINT.
14. A ___ data type is available for supporting 64-bit integers.
15. MBCS stands for ___.
16. ___ command is used to update the database statistics.
17. After creating a table, data can be stored in the table by ___ statement, ___ command or ___ command.
18. The ___ option can also be combined with the VALUE COMPRESSION clause.
19. The ___ command samples all of the data within the existing table and builds a compression dictionary from this information.
20. In a ___ table, the records are laid out in key-ordered sequence.