Choose a right answer.

[A]

A SOL environment is the framework under which data may exist and SQL operations on data may be executed

[B]\*

All of the others

[C]

Within a SQL environment are two special kinds of processes: SQL clients and SQL servers.  
[D]

A SQL environment is a DBMS running at some installation.

Schema-altering commands are known as……commands.

[A]

Data Manipulation Language  
[B]

Data Controlling Language

[C]\*

Data Definition Language

[D]

None of the others

Referential integrity Constraints control relationships between \_.

[A]

operations of an object

[B]\*

tables in a database

[C]

attributes in a table  
[D]

database instances

|  |  |  |
| --- | --- | --- |
|  | Choose the right statement below to declare zero or one occurrence of an Element in DTD. | |
|  | [A] |  |
|  | <"ELEMENT element-name (child-name?)> |  |

[B]

<IELEMENT element-name (child-name+)>

[C]

<'ELEMENT element-name (child-name\*)>  
[D]

<IELEMENT element-name (child-name)>

Given the relation Employee(SSN. FNAME. LNAME. SALARY). Select the right query below to find the employee(s) who has the lowest salary in the company

[A]\*

SELECT LNAME. FNAME. SALARY FROM Employee WHERE SALARY IN (SELECT MIN(SALARY) FROM Employee)

[B]

SELECT LNAME. FNAME. SALARY FROM Employee WHERE SALARY >= ALL (SELECT SALARY FROM Employee)  
[C]

SELECT LNAME. FNAME. SALARY FROM Employee WHERE SALARY < MAX (SELECT SALARY FROM Employee)  
[D]

None of the others

Given a relation R(A.B.C.D). Which of the followings is trivial?

[A]

A->BCD

[B]\*

A->->BCD

[C]

A->AB

[D]

A->->AB

Which of the following is NOT a standard aggregation operator?

[A]  
SUM

[B]  
AVG

[C]\*

GROUP

[D]

COUNT

Select the well-formed XML

[A]

All of the others

[B]\*

<? xml version = "1.0" ?>  
<MovieData>

<Movie tiHe="StarWar\*><Year>1997</Yearx/MovJe>  
</MovieData>

[C]

<? xml version - "1 0' ?>  
<MovieData>

<Movie Me-'StarWaf\*><Year>1997</Year></Movie>

</Movies>  
[D]

<? xml version = 1 0 7>  
<MovieData>

<Movie trtle-"StarWar"><Year>1997</Movie></Year>  
</MovieData>

Which of the followings is true?

[A]\*

The Entity Relationship (ER) model represents the structure of data graphically

[B]

The ER model is a low level database design  
IC]

The ER model represents the operation on data  
[D]

All of the others

In the three-tier architecture, the database tier's function is to

[A]

All of the others.  
[B]

Execute the business logic of the organization operating the database.  
[C]

Manage the interactions with the user.

[D]

Execute queries that are requested from the application tier.

|  |  |  |
| --- | --- | --- |
|  | Choose a right answer | |
|  | [A]  When a privilege is granted, it cannot be revoked | |
|  | [B]  Privileges cannot be granted on a view | |
|  | [C]  An authorization ID may be granted privileges from others or may grve its privileges to others |  |
|  | [D]  All of the others | |

Which of the followings is part of data model?

[A]

Operations on the data  
[B]

Constraints on the data

[C] \*

All of the others |

[D]

Structure of the data

Exception handler in PSM is defined as follows:

DECLARE <where to go next> HANDLER FOR condition list> <statement>  
The <where to go next> clause can be:

[A]

UNDO

[B]  
EXIT

[C]\*

All of the others

[D]

CONTINUE

|  |  |  |
| --- | --- | --- |
|  | In SQL language, the command/statement that let you add an attribute to a relation is\_ | |
|  | [A] Alter |  |
|  | [B]  None of the others | |
|  | [C]  Insert |  |
|  | [D]  Update   |  |  |  | | --- | --- | --- | |  | Choose the right statement | | |  | [A]  All of the others. |  | |  | [B]  The syntax to remove a trigger is. DROP TRIGGER <trigger\_name> | | |  | [C]  Use ALTER TRIGGER to change the definition of a trigger | | |  | [D]  You can remove a trigger by dropping it or by dropping the trigger table. | | | |

Consider the Dalalog rule H(xy) <- Sfx. y) AND x > 2 AND y < 6. Relation S(x y) has 3 tuples (2.3). (3.5). and (4.6). What is about H?  
[A]

H has a tuple (2.3)  
[B]

H has 3 tuples (2.3) and (3.5) and (4.6)  
[C]

H has 2 tuples (2.3) and (3.5)  
[D]\*

H has a tuple (3.5)

Select the valid query to declare the foreign key presC# of the relation Studiolname. address. presC#) that references the cert of the relation MovieExeclname. address. cert#. netWorth):  
[A]

All of the others.  
[B]

CREATE TABLE Studio (name CHAR(30) PRIMARY KEY. address VARCHAR(256). presC# INT FOREIGN KEY):  
[C]

CREATE TABLE Studio (name CHAR(30) PRIMARY KEY. address VARCHAR(256). presC# INT UNIQUE KEY REFERENCES MovieExec):

[D]\*

CREATE TABLE Studio (name CHAR(30) PRIMARY KEY. address VARCHAR(256). presC# INT REFERENCES Movie Exec (cert#));

Choose the right statement

[A]

XML Schema allows us to declare simple types, such as integer or float and even complex types

[B]\*

All of the others

[C]

XML schema provides us the ability to declare keys and foreign keys.  
[D]

XML Schema is an alternative way to provide a schema for XML documents.

The relational operator that yields all possible pairs of rows from two tables is known as a \_  
[A]

Union  
[B]

Selection

[C]\*

Product

[D]

Join

Consider a relation with schema R(A, B, CD) and FD's BC-> D, D-> A, A-> B. Which of the following is the key of R?

[A]  
BD

[B]  
D

[C]  
AB

[D]\*

BC

The ER Diagram uses three principle element types:

[A]

Entity sets. Constraints, and Relationships  
[B]

Entity sets. Attributes and Constraints  
IC]

Attributes. Constraints, and Relationships

[D]\*

Entity sets. Attributes, and Relationships

In PSM. the difference between 3 stored procedure and a function is that

[A]

A function has the return statement.

[B]

We can declare local variables in a function.

[C]\*

All of the others

[D]

Loops are not allowed in a function.

Selecl Ihe right syntax for HAVING clause in SOL

[A]

SELECT <list of attributes>  
FROM <list of tables>  
WHERE <conditions on tuples>  
HAVING <conditions on groups>  
GROUP BY <list of attributes>

[B]\*

SELECT <list of attributes>  
FROM <list of tables>  
WHERE <conditions on tuples>  
GROUP BY <list of attributes>  
HAVING <conditions on groups>

[C]

SELECT < list of attributes>  
FROM < list of tables>  
HAVING <conditions on groups>  
WHERE <conditions on tuples>  
GROUP BY <list of attributes>  
[D]

All of the others

Select the right answer.

[A]\*

All of the others

[B]

Tags in XML are text surrounded by triangular brackets (for example, <\_>).  
[C]

An XML tag can be a single tag with no matching closing tag (for example. <foo />  
[D]

Tags in XML comes in matching pairs, with an opening tag like <foo> and a matched closing tag like</foo>

Given relations R(A.B) and S(B.C.D). The result of natural join of the relations R and S has

[A]

Only two attributes R B and SB  
[B]

None of the others  
[C]

Only attribute B

[D]\*

Attributes A B. C. D

Given relation U(A, B, C) that has 2 tuples (1,2,3) and (4,5,6), and relation V(B(C, D) that has 2 tuples (2,3,10) and (2,3,11). Choose the right answer below;

[A]

None of the others.  
[B]

The outer join of U and V is the relation R(A, B, C, D) that has 2 tuples (1.2, 3.10) and (1,2, 3,11).

[C]\*

The outer join of U and V is the relation R(A. B. C. D) that has 3 tuples (1.2.3.10) .(1.2.3.11) and (4.5.6. NULL).

[D]

The outer join of U and V is the relation R(A. B. C. D) that has only 1 tuple (NULL. 4.5.6).

Data Definition language (DDL) is used to \_

[A]\*

declare database schemas

[B]

connect to database and query database  
[C]

query database and modify the database  
[D]

All of the others

The result of (UNKNOWN OR TRUE) is

[A]

UNKNOWN

[B]

FALSE

[C]\*

TRUE

[D]  
NULL

In Java Database Connectivity (JDBC). before we can execute SQL statements), we need to \_

[A]

Create a cursor.  
[B]

Create an environment  
[C]

Create a description.

[D]\*

Establish a connection to the database and create statement(s).

Choose the right answer

[A]

A User-Defined Type (UDT) in SQL can be the type of a table  
[B]

A UDT can be the type of an attribute belonging to some table  
[C]

The form of UDT definition is: CREATE TYPE T AS (<primitive type | attribute declarations>)

[D]\*

All of the others

Choose a right answer

[A]

The object-relational model is the extension of the relation model with new features such as structured types, methods, identifiers for tuples, and references  
[B]

Object-relation model allows a non-atomic type that can be a relation schema which is called nested relation  
[C]

In object-relational model, the type of an attribute can be a reference to a tuple with a given schema or a set of references to tuples with a given schema  
[D]\*

All of the others

Which of following is never used as a data model'

[A]

Hierarchical data model  
[B]

Relational data model  
[C]

Tree-based data model  
[D]

Graph-based data model  
|[E]\*

None of the others

Select the right answer

[A]

Virtual views do not exist physically  
[B]

Virtual views are defined by an expression like a query  
[C]

Virtual views can be queried and can even be modified

[D]\*

All of other

Select the right statement to declare MovieStar to be a relation whose tuples are of type StarType. Note; StarType is a user-defined type that has its definition as follows;  
CREATE TYPE StarType AS (  
nameCHAR(30).  
address CHAR(IOO) };

[A]

CREATE TABLE MovieStar (name StarType).  
PI

CREATE TABLE MovieStar (name StarType PRIMARY KEY);  
[C]\*

CREATE TABLE MovieStar OF StarType Q;

[D]

None of the others

Suppose an updatable view ParamountMovies is associated with Movies relation. Choose a nght answer  
[A]\*

Drop Movies relation also delete the view ParamountMovies  
[B]

Drop ParamountMovies also delete Movies  
IC]

An update on ParamountMovies is translated into Movies  
[D]

None of the others

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

The most useful index on a relation is an index on its key. This is because  
[A]

The index on non key attribute(s) runs slower  
[B]

The search operation based on the primary key is commonly used.  
[C]

The index on non key attribute(s) makes update operations to the relation more complex and time-consuming  
[D]

All of the others

Which of the following statements is true?

[A]

I3NF implies BCNF

[B]

Multi-valued Dependency (MVD) implies Fourth Normal form (4NF)

[C]\*

4NF implies BCNF and BCNF implies 3NF  
[D]

None of the others

The binary relationship between classes in UML is called -

[A]

Relation

[B]\*

Association

[C]

Aggregation  
[D]

Composition

Choose the right statement

[A]

Sub-queries return a single constant this constant can be compared with another value in a WHERE clause;  
[B]

Sub-queries return relations, that can be used in WHERE clause  
[C]

Sub-queries can appear in FROM clauses, followed by a tuple variable

[D]\*

All of the others

Which of the following statements is true?

[A]

in BCNF condition, the left side of every non trivial FD must be a super key.

[B]\*

All of the others

[C]

Any two-attribute relation is in BCNF  
[D]

BCNF condition guarantees the anomalies do not exist

Given the relation Movies(title, year, length, genre. studioName). Select the right query to create a View with the titles and studio names of all movies that were produced in 1980  
[A]

CREATE VIEW OldMovies SELECT title. studioName FROM Movies WHERE year-1980  
[B]

CREATE VIEW OldMovies SELECT title, year FROM Movies WHERE year=1980

[C]\*

CREATE VIEW OldMovies AS SELECT title. studioName FROM Movies WHERE year=1980  
[D]

None of the others

Given the relation Employee(SSN. FNAME. LNAME. SALARY. DepartmentNo). Select the right query below to count the number of employees in each department  
[A]

SELECT COUNTf) FROM Employee  
[B]\*

SELECT DepartmentNo. COUNT(\*) FROM Employee GROUP BY DepartmentNo

[C]

SELECT DepartmentNo. COUNT(\*) FROM Employee  
[D]

None of the others

Consider a relation with schema R(A, B. C. D) and FD's A-> B. A-> C. C -> D. Which ofthe following is the {A}+ ?  
[A]

{A}

[B]\*

{A B C D}

[C] {A. B. C}  
[D] {A.B}

To create a constraint (for example, referential integrity constraint) on a relation, the owner ofthe schema must have

[A]

UNDER privilege

[B]\*

REFERENCES privilege  
[C]

UPDATE privilege   
[D]

EXECUTE privilege

Choose a wrong answer.

[A]\*

Relational algebra can express recursion.  
[B]

Basic relational algebra can be expressed in Datalog rule(s).  
IC]

Single Datalog rule can be expressed in relational algebra.  
[D]

Datalog does not support bag operations.

In DTD. the main difference between PCDATA and CDATA is

[A]\*

PCDATA is text that will be parsed by a parser and tags inside the text will be treated as markup and entities will be expanded CDATA is text that will NOT be parsed by a parser and tags inside the text wil  
NOT be treated as markup and entities will not be expanded.

[B]

All of the others.

[C]

CDATA is used to assert something about the allowable content of elements where as PCDATA is used as a common type for attribute   
[D]

There's no difference between PCDATA and CDATA.

\_\_\_\_\_\_\_authorizes access to database, coordinate, monitor its use, acquiring software, and hardware resources.

[A]

All of the others

[B]\*

Database administrator

[C]

Database designer

[D]

Database end-user

The key for a weak entity set E is\_

[A]\*

Zero or more attributes of E and key attributes from supporting entity sets

[B]

The set of attributes of supporting relationships for E  
IC]

The set of attributes of supporting entity sets  
[D]

Zero or more attributes of E

Choose right answer(s).

[A]

NULL value is unknown, inapplicable, or withheld  
[B]

Comparisons with NULL values will return UNKNOWN  
[C]

Arithmetic operators on NULL values will return a NULL value

[D]\*

All of orther

Choose the right statement

[A]

The action associated with the trigger executes no matter what the condition is hold or not

[B]

Triggering events do not support INSERT and DELETE.  
[C]

All of the others.

[D]\*

When the trigger is awakened, it tests a condition. If the condition is satisfied, the action associated with the trigger is executed.

Four characteristics of transactions are

[A]

None of the others  
[B]

Read uncommitted, Read committed, Repeatable read, Serializable  
[C]

Atomicity. Isolation. Concurrency. Durability

[D]\*

Atomicity. Isolation. Consistency. Durability

Select the right answer

[A]   
An index is a data structure used to speed access to tuples of a relation, given values of one or more attributes

[B]

The key for index can be any attribute or set of attributes, and need not be the key ofthe relation  
[C]

We can think of the indexas a binary search tree of (key, locations) pairs in which a key a is associated with a set of locations of the tuples

[D]\*

All of orther

Choose the right statement to grant the INSERT and SELECT privileges on table Movies to users torn' and jerry'  
[A]

GRANT SELECT. INSERT on Movies  
[B]

GRANT SELECT. INSERT on Movies TO torn, jerry CASCADE

[C]\*

GRANT SELECT. INSERT on Movies TO torn, jerry WITH GRANT OPTION

[D]

GRANT SELECT. INSERT on Movies TO ALL

When declaring foreign key constraint for relation A thai references relation B. the referenced attribute(s) of the relation B must be declare as\_\_\_\_\_\_\_

[A]\*

UNIQUE or PRIMARY KEY

[B]

FOREIGN KEY  
[C]

INDEX KEY  
[D]

All of the others

Choose an incorrect statement

[A]\*

None of the others  
[B]

Database is created and maintained by a DMBS  
IC]

Database is a collection of information that exists over a long opened of time  
[D]

Database is a collection of data that is managed by a DBMS

Select the right statement

[A]\*

All of the others

[B]

Every constraint has a name. If we don't define constraint's name explicitly, then DBMS automatically generates a name for it  
[C]

We can create constraint on a tuple as a whole.  
[D]

We can create constraint on a single attribute

A class in UML is similar to\_\_\_

[A]

A Relationship in E/R model  
[B]

An attribute in E/R model  
[C]\*

An entity set in E/R model

[D]

None of the others

Given relations Movies(title, year, length, genre. studioName. producer#). MovieExec(name. address. cert#). and Studio(name. address. presC#). Suppose we have the materialized view that finds the name -  
ofthe producer of a given movie as follows:  
CREATE MATERIALIZED VIEW MovieProd AS

SELECT title, year, name

FROM Movies. MovieExec

WHERE producer# – cert#  
Which of the following modification will affect the MovieProd materialized view?

[A]

Insert a new tuple into Studio  
[B]

Delete a tuple from Studio

[C]\*

Insert a new tuple into Movies or delete a tuple from Movies

[D]

None of the others