

**1D0-541**

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## Exam A

### QUESTION 1

Which term describes the management of simultaneous transactions to prevent conflicts?

- A. Parallelism
- B. Serialization
- C. Database control
- D. Concurrency control

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 2

Consider the following SQL statement and the Orders relation shown in the exhibit:  
How many records should be returned?

```
SELECT *  
FROM Orders  
WHERE Order_Date BETWEEN '12/14/01' AND '02/02/02';
```

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2001	11-04-01	1001	108	24.89
2004	12-14-01	1004	210	126.99
2006	01-14-02	1008	187	1216.69
2009	01-15-02	1008	350	926.89
2012	02-02-02	1001	108	816.09
2015	02-10-02	1004	210	1818.19
2016	02-15-02	1006	109	678.99

ActualTests

**Orders Relation**

- A. Two records
- B. Three records
- C. Four records
- D. Five records

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

The database manager wants to give Rubio and Doe the ability to modify the Project Relation shown in the exhibit. A temporary employee named Temp needs to access the data in the database to generate reports. Which group of SQL statements will perform this task?

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

**Project Relation**

- A. GRANT UPDATE ON Project TO Rubio, Doe;  
GRANT SELECT ON Project TO Temp;
- B. GRANT ALL PRIVILEGES ON Project TO Rubio, Doe;  
GRANT UPDATE ON Project TO Temp;
- C. GRANT SELECT ON Project  
WHERE Manager = 'Rubio';  
GRANT SELECT ON Project  
WHERE Manager = 'Doe';
- D. GRANT UPDATE ON Project  
WHERE Manager = 'Rubio';  
GRANT UPDATE ON Project  
WHERE Manager = 'Doe';  
GRANT SELECT ON Project TO Temp;

**Correct Answer:** A

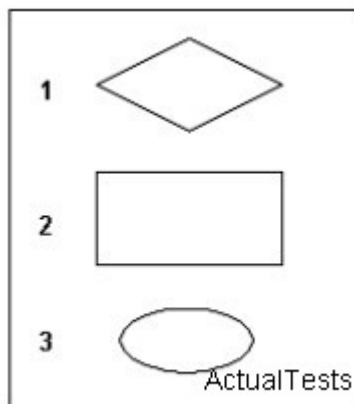
**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 4

Consider the symbols shown in the exhibit. Which of the following correctly identifies these symbols when used in an entity-relationship (ER) diagram?



- A. 1 = attribute, 2 = entity, 3 = relationship

- B. 1 = entity, 2 = relationship, 3 = attribute
- C. 1 = relationship, 2 = entity, 3 = attribute
- D. 1 = relationship, 2 = attribute, 3 = entity

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 5

Consider the Orders relation shown in the exhibit. Which of the following SQL statements would replace the value in the Sales\_Rep\_No column with 110 everywhere that Sales\_Rep\_No 108 is listed?

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2001	11-04-01	1001	108	24.89
2004	12-14-01	1004	210	126.99
2006	01-14-02	1008	187	1216.69
2009	01-15-02	1008	350	926.89
2012	02-02-02	1001	108	816.09
2015	02-10-02	1004	210	1818.19
2016	02-15-02	1006	109	678.99

Actual Tests

**Orders Relation**

- A. `UPDATESales_Rep_No  
IN Orders  
SET(Sales_Rep_No = 110  
WHERE Sales_Rep_No = 108);`
- B. `UPDATE Orders  
SET Sales_Rep_No = 110  
WHERE Sales_Rep_No = 108;`
- C. `UPDATE Orders  
SET Sales_Rep_No = 110;`
- D. `UPDATE Orders  
WHERE Sales_Rep_No = 108  
SET Sales_Rep_No = 110;`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 6

A theta-join can be viewed as:

- A. the intersection of two relations.
- B. a Cartesian product of two relations.
- C. a restricted Cartesian product of two relations.

D. the Cartesian product of two union-compatible relations.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 7**

In which situation would the DBMS use a serial schedule to execute the transactions?

- A. Concurrent transactions read data from the same data structure.
- B. Concurrent transactions write data to different data structures.
- C. Concurrent transactions read or write the same data structure.
- D. Concurrent transactions read or write from different data structures.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 8**

Which of the following definitions applies to all types of databases?

- A. Data that is stored as tables
- B. Software that manipulates data
- C. Data that is stored in a structured manner
- D. Data records that are stored sequentially in a file

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 9**

What is the highest normal form of the relation(s) shown in the exhibit?

Cust_No	Cust_Name	Sales_Rep_No
011	MicroWidget	1350
012	MacroWidget	7403
013	Xyz Corp	2457
014	DayCo	8957

**Customer Relation**

Sales_Rep_Name	Sales_Rep_No
Jane Lee	1350
Henry Butler	7403
Corey Harris	2457
Elena Perez	8957

**Sales\_Rep Relation**

ActualTests

- A. No normal form
- B. Second normal form
- C. First normal form
- D. Third normal form

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 10

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What is the highest normal form of the relation(s) shown in the exhibit?

Teacher_ID	Teacher_Name	Dept_Code	Office_No	Teacher_Aide	Dept_Phone
A12	M. Smith	Acc	A234	T. Juarez	555-1375
E32	L. Rodriguez	Eco	E781	L. James	555-7402
M34	Y. Yee	Math	M442	J. Daye	555-2345
S29	H. Huan	Sci	S301	R. Nguyen	555-8945
A15	M. Chang	Acc	A257	T. Juarez	555-1375
E42	T. Colton	Eco	E331	L. James	555-7402
M74	R. Perez	Math	M662	J. Daye	555-2345

ActualTests

**Teacher Relation**

- A. Boyce-Codd normal form
- B. First normal form
- C. Second normal form
- D. Third normal form

**Correct Answer: C**

Section: (none)

Explanation

Explanation/Reference:

#### QUESTION 11

Consider the Dept1\_Parts and Dept2\_Parts relations shown in the exhibit. Which of the following SQL statements would create an intersection of the two relations with the widest variety of Structured Query Language dialects?

Part_ID	Part_Name	Description	Supp_ID
0312	bolt	hexagon bolt	221
0322	screw	capscrew	441
0332	socket screw	button head	551
0342	flange	blind flange	331
0352	socket screw	countersunk	441

Dept1\_Parts Relation

Part_ID	Part_Name	Description	Supp_ID
0302	flange	slip-on flange	331
0322	screw	capscrew	441
0332	socket screw	button head	551
0362	bolt	studbolt	441

Dept2\_Parts Relation

ActualTests

- A. SELECT \*  
FROM Dept1\_Parts  
AND  
(SELECT \*  
FROM Dept2\_Parts);
- B. SELECT \*  
FROM Dept1\_Parts  
INTERSECTION  
(SELECT \*  
FROM Dept2\_Parts);
- C. SELECT \*  
FROM Dept1\_Parts  
WHERE Dept1\_Parts.Part\_ID = Dept2\_Parts.Part\_ID;
- D. SELECT \*  
FROM Dept1\_Parts  
WHERE Dept1\_Parts.Part\_ID = Dept2\_Parts.Part\_ID;

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

### QUESTION 12

Your enterprise has created a database and database application. The testing phase for the project has started. Which of the following best describes white-box testing of the projects software?

- A. The database designer tests the software because he or she is able to make necessary changes to the underlying code for the software.
- B. A user who has no knowledge of thesoftwares underlying code tests the software.
- C. Someone other than the database designer tests the software. This person has no access to the underlying code and attempts to use the software only in ways not considered by the software designers.
- D. A person tests the software and submits suggestions to the software's underlying code. This person is someone other than the database designer, but has access to thesoftwares underlying code.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 13

Consider the Dept1\_Parts and Dept2\_Parts relations shown in the exhibit. Which of the following SQL statements would create a set difference of the two relations with the widest variety of ActualTests.com Structured Query Language dialects?

Part_ID	Part_Name	Description	Supp_ID
0312	bolt	hexagon bolt	221
0322	screw	capscrew	441
0332	socket screw	button head	551
0342	flange	blind flange	331
0352	socket screw	countersunk	441

**Dept1\_Parts Relation**

Part_ID	Part_Name	Description	Supp_ID
0302	flange	slip-on flange	331
0322	screw	capscrew	441
0332	socket screw	button head	551
0362	bolt	studbolt	441

**Dept2\_Parts Relation**

ActualTests

- A. 

```
SELECT *
FROM Dept1_Parts
EXCEPT
(SELECT Part_ID
FROM Dept2_Parts);
```
- B. 

```
SELECT *
FROM Dept1_Parts
MINUS
(SELECT Part_ID
```



- FROM Dept2\_Parts);
- C. SELECT \*  
FROM Dept1\_Parts  
DIFFERENCE  
(SELECT Part\_ID  
FROM Dept2\_Parts);
- D. SELECT \*  
FROM Dept1\_Parts  
DIFFERENCE  
(SELECT Part\_ID  
FROM Dept2\_Parts);

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 14**

Which term describes the rejoining of relations that have been decomposed?

- A. Normalization
- B. Denormalization
- C. Referential integrity
- D. Domain constraints

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 15**

Which subset of Structured Query Language (SQL) is used to perform operations such as data retrieval or deletion on the data contained in a database?

- A. Data Control Language
- B. Data Definition Language
- C. Data Formatting Language
- D. Data Manipulation Language

**Correct Answer:** D

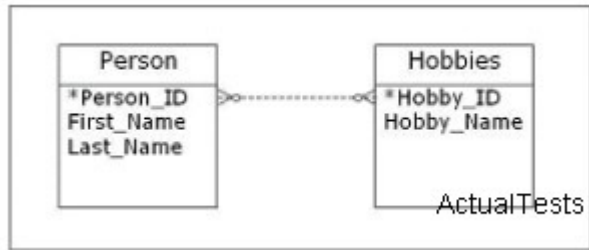
**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 16**

Consider the entity-relationship (ER) diagram shown in the exhibit. Which type of relationship between the two entities is shown?



- A. m:m
- B. m:n
- C. 1:1
- D. 1:n

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 17

Which of the following best describes the ON DELETE CASCADE referential integrity constraint?

- A. If a parent key is deleted, any child keys referenced by the parent key are automatically deleted.
- B. If any child key references a parent key, the record containing the parent key cannot be deleted.
- C. If a parent key is deleted, all child keys are automatically set to a specified value.
- D. If a parent key is deleted, no test is made for referential integrity.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 18

The exhibit shows a table called Student Relation that tracks all information related to a student's courses, professors and sites. What would be the consequence of removing all records for a student with the ID 1311?

ID	Student	Course_ID	Professor	Dept	Site_ID	Time
1211	Jones	5001	Yee	Math	220	3:00
1211	Jones	7001	Gregory	Psych	320	1:00
1311	O'Brien	5001	Yee	Math	220	3:00
1311	O'Brien	7001	Gregory	Psych	320	1:00
1311	O'Brien	8001	Rodriguez	Chem	420	10:00

**Student Relation**

- A. Only an update anomaly would occur.
- B. An insertion anomaly would occur.

- C. A deletion anomaly would occur.
- D. An update anomaly and a deletion anomaly would occur.

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 19

Consider the following relation definition:

STUDENT(  
 Student\_Number: integer NOT NULL  
 Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number  
 HOUSING(  
 Housing\_ID: integer NOT NULL  
 Student\_Number: integer NOT NULL  
 Building: variable length character string length 25 NOT NULL) Primary Key Housing\_ID  
 Foreign Key Student\_Number References  
 STUDENT(Student\_Number)  
 ON DELETE NO CHECK  
 ON UPDATE

Which integrity constraint is violated in this relation definition?

- A. Entity integrity
- B. Domain constraint
- C. Referential integrity
- D. Enterprise constraint

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 20

A relation for a construction company is shown in the exhibit. Which of the following best defines the relationship between Cust\_ID and Cust\_Name?

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

ActualTests

**Project Relation**

- A. Cust\_Name is the determinant.
- B. Cust\_Name is transitively dependent on Cust\_ID.

- C. Cust\_ID is transitively dependent on Cust\_Name.
- D. Cust\_Name is functionally dependent on Cust\_ID.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 21

Consider the relations shown in the exhibit. Due to restructuring, the sales department has been eliminated and the employees working in that department have been dismissed. All ID information is stored as integers. Which SQL statement would be used to return a relation with all information for the employees who have been dismissed?

ID	Last_Name	First_Name	Birth_Date	Dept_ID
0001	Vargas	Jose	09-15-70	032
0002	Jones	Elisa	12-12-55	042
0003	Chu	Helen	04-14-75	032
0004	Day	Danny	06-12-65	022

**Employee Relation**

Dept_ID	Dept_Name	Dept_Mngr	Dept_Ext
022	Sales	Reyes, Nancy	5432
032	Accounting	Yee, Cindy	1223
042	Finance	Ames, Joe	4675

**Department Relation**

ActualTests

- A. SELECT \*  
FROM Employee;
- B. SELECT ID,Last\_Name  
FROM Employee;  
WHERE ID = 0004;
- C. SELECT \*  
FROM Employee  
WHERE Dept\_ID = 022;
- D. SELECT \*  
FROM Employee  
WHERE Dept\_ID = 022;

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

## Exam B

### QUESTION 1

Which term best defines a database system in which data records are stored in one or more files with no structured relationship?

- A. Flat-file database
- B. Relational database
- C. Distributed database
- D. Object-oriented database

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 2

Which of the following describes two desirable characteristics of a primary key?

- A. A primary key should be a value that may be null and may change over time.
- B. A primary key should be a value that is not null and will never change.
- C. A primary key should consist of meaningful data and a value that can be changed if needed.
- D. A primary key should not consist of meaningful data and a value that can be changed if needed.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

Which relational algebraic operation is used to select specific columns (attributes) from a relation?

- A. Union
- B. Difference
- C. Projection
- D. Intersection

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 4

Consider the Information Engineering diagram in the exhibit showing a conceptual data model of the relations BUILDING and RESIDENT. What is the next step in refining the data model?



- A. Create intermediate entities.
- B. Create a logical data model.
- C. Resolve many-to-many relationships.
- D. Identify and resolve complex relationships.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 5

Which of the following best describes the information contained in the data dictionary (or system catalog)?

- A. Metadata
- B. Data model
- C. Table data
- D. Metafile

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 6

Consider the following relation definitions:

STUDENT(

Student\_Number: integer NOT NULL

Name: variable length character string length 20 )

Primary Key Student\_Number

HOUSING(

Housing\_ID: integer NOT NULL

Student\_Number: integer NOT NULL

Building: variable length character string length 25 ) Primary Key Housing\_ID

Foreign Key Student\_Number References STUDENT(Student\_Number) ON DELETE NO ACTION  
ON UPDATE CASCADE

What are the referential constraints for the relations defined in these relation definitions?

- A. There is no relationship between changes in STUDENT(Student\_Number) and HOUSING(Student\_Number).
- B. When STUDENT(Student\_Number) is changed or deleted, this modification or deletion will automatically be reflected in HOUSING(Student\_Number).

- C. Modifications to HOUSING(Student\_Number) are automatically reflected in changes to STUDENT (Student\_Number), but deletions are not permitted.
- D. Modifications to STUDENT(Student\_Number) are automatically reflected in changes to HOUSING (Student\_Number). For a deletion to occur from STUDENT(Student\_Number), it must first occur in HOUSING(Student\_Number).

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 7

Which characteristic is an advantage of a database management system?

- A. Data files are owned and maintained by the users.
- B. Database administration is simplified.
- C. A standard method can be used to access the database.
- D. Data is decentralized.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 8

Consider the Stu\_Act and Act\_Fee tables shown in the exhibit.

Which relational algebraic operation would yield the Activity Relation table in the exhibit?

Student_ID	Activity
1001	Bowling
1002	Racquetball
1003	Tennis
1004	Racquetball

**Stu\_Act Relation**

Activity	Fee
Bowling	50
Racquetball	75
Tennis	100

**Act\_Fee Relation**

Student_ID	Activity	Fee
1001	Bowling	50
1002	Racquetball	75
1003	Tennis	100
1004	Racquetball	75

**Activity Relation**

ActualTests

- A. Union
- B. Intersection
- C. Natural join
- D. Cartesian product

**Correct Answer:** C  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

**QUESTION 9**

A foreign key maps to a:

- A. prime key.
- B. indirect key.
- C. parent key.
- D. composite key.

**Correct Answer:** C  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

**QUESTION 10**

Which security technique limits access by unauthorized users to parts of an enterprise database?

- A. Views
- B. Concurrency
- C. Locking
- D. Integrity controls

**Correct Answer:** A  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

**QUESTION 11**

Which of the following ACID properties requires that a transaction be executed in its entirety or not at all?

- A. Durability
- B. Consistency
- C. Isolation
- D. Atomicity

**Correct Answer:** D  
**Section:** (none)  
**Explanation**

**Explanation/Reference:**

**QUESTION 12**

To create a view, what are the minimal privileges that a user must have for the relations used to make the view?



- A. GRANT
- B. REVOKE
- C. SELECT
- D. CREATE VIEW

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 13

Which database security technique prevents invalid data from being entered into the database?

- A. File locking
- B. User authorization
- C. Parity checks
- D. Integrity controls

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 14

Consider the relation shown in the exhibit. Which of the following SQL statements would properly add information for a new employee?

Emp_ID	First_Name	Last_Name	Birth_Date
0001	Helen	Lee	12-05-75
0002	James	Smith	10-25-76
0003	Eliza	Perez	02-15-80
0004	Samuel	Hayes	11-07-71

**Employee Relation**

- A. INSERT INTO Employee VALUES(0005, Tim, Bogart, 03-15-77);
- B. INSERT INTOEmployee(Emp\_ID, First\_Name, Last\_Name, Birth\_Date) VALUES(0004, Tim, Bogart, 03-15-77);
- C. INSERT INTOEmployee(Emp\_ID, First\_Name, Last\_Name, Birth\_Date) VALUES(0005, Tim, Bogart, 03-05-77);
- D. INSERT INTOEmployee(Emp\_ID, First\_Name, Last\_Name, Birth\_Date) VALUES(0005, Tim, Bogart, 03-05-77);

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 15**

Which statement accurately describes a characteristic of attributes?

- A. The ordering of attributes in a table is significant.
- B. An attribute contains values from multiple domains.
- C. An attribute name can be used only once per table.
- D. An attribute name can be used only once in a relational database system with multiple tables.

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 16**

Consider the Orders relation shown in the exhibit. Which of the following SQL statements would return all complete tuples for order dates in 2002, arranged by amount from lowest to highest?

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2001	11-04-01	1001	108	24.89
2004	12-14-01	1004	210	126.99
2006	01-14-02	1008	187	1216.69
2009	01-15-02	1008	350	926.89
2012	02-02-02	1001	108	816.09
2015	02-10-02	1004	210	1818.19
2016	02-15-02	1006	109	678.99

ActualTests

**Orders Relation**

- A. 

```
SELECT *
FROM Orders
WHERE Order_Date LIKE _02
ORDER BY Amount;
```
- B. 

```
SELECT (Order_Date, Amount)
FROM Orders
WHERE Order_Date LIKE %02
ORDER BY Amount;
```
- C. 

```
SELECT *
FROM Orders
WHERE Order_Date LIKE _02
ORDER BY Order_No;
```
- D. 

```
SELECT *
FROM Orders
WHERE Order_Date LIKE %02
ORDER BY Amount;
```

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 17**

Which type of entity must reference another entity for its data to be meaningful?

- A. Weak
- B. Strong
- C. Foreign
- D. Primary

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 18**

Consider the Recreation relation shown in the exhibit. You need to apply a SQL statement to the Recreation relation that will return the following data:

Which SQL statement applied to the Recreation relation will return this data?

Student_ID	Activity	Activity_Fee
1001	Bowling	50
1001	Racquetball	75
1002	Bowling	50
1003	Handball	35
1003	Racquetball	75
1004	Bowling	50
1004	Fencing	125

**Recreation Relation**

Bowling

Fencing

Handball

Racquetball

ActualTests

- A. SELECT Activity FROM Recreation;
- B. SELECT DISTINCT Activity FROM Recreation;
- C. SELECT Activity FROM Recreation  
WHERE NOT LIKE Activity;
- D. SELECT Activity FROM Recreation  
WHERE DISTINCT Activity;

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 19**

Which component in the three-tier database architecture handles the data-processing and business logic?

- A. Thin client
- B. Fat client
- C. Database server
- D. Application server

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 20**

In a relational database, which term describes a single table consisting of rows and columns?

- A. Entity
- B. Matrix
- C. Relation
- D. Data dictionary

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

## **Exam C**

### **QUESTION 1**

Which concurrency control method should be used only when conflicts between transactions rarely occur?

- A. Locking
- B. Time stamps
- C. Optimistic
- D. Serialization

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### **QUESTION 2**

Which mechanism provides database users with controlled access to the database through the use of virtual tables?

- A. View
- B. Data dictionary
- C. Database control language
- D. Database management system

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### **QUESTION 3**

Consider the relational database shown in the exhibit. What is the foreign key in this database?

ID	Last_Name	First_Name	Birth_Date	Dept_ID
0001	Vargas	Jose	09-15-70	032
0002	Jones	Elisa	12-12-55	042
0003	Chu	Helen	04-14-75	032
0004	Day	Danny	06-12-65	022

**Employee Relation**

Dept_ID	Dept_Name	Dept_Mngr	Dept_Ext
022	Sales	Reyes, Nancy	5432
032	Accounting	Yee, Cindy	1223
042	Finance	Ames, Joe	4675

ActualTests

**Department Relation**

- A. Employee.Dept\_ID
- B. Dept\_Mngr
- C. Dept\_Name
- D. Department.Dept\_ID

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 4

Consider the Project relation shown in the exhibit as well as the following SQL statement:  
Which of the following tables shows the Project relation after execution of this SQL statement?

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

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**Project Relation**

☐ A.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

☐ B.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

☐ C.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

☐ D.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1002	98-11	J & L	Quality Analysis	Start	Chang
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

- A. A
- B. B
- C. C
- D. D

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 5

Which database architecture is best suited to implementation in the World Wide Web environment?

- A. Two-tier using thin client
- B. Three-tier using fat client
- C. Three-tier using thin client
- D. Centralized mainframe with terminal client

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 6

Using the Customer and Sales\_Rep relations shown in the exhibit, you must determine a relational algebraic expression that will result in the following relation: Which of the following relational algebraic expressions would result in this relation? Using the Customer and Sales\_Rep relations shown in the exhibit, you must determine a relational algebraic expression that will result in the following relation: Which of the following relational algebraic expressions would result in this relation?

Cust_No	Cust_Name	Sales_Rep_No	Sales_Rep_Name	Sales_Rep_No1
011	MicroWidget	1350	Jane Lee	1350
011	MicroWidget	1350	Henry Butler	7403
011	MicroWidget	1350	Corey Harris	2457
011	MicroWidget	1350	Elena Perez	8957
012	MacroWidget	7403	Jane Lee	1350
012	MacroWidget	7403	Henry Butler	7403
012	MacroWidget	7403	Corey Harris	2457
012	MacroWidget	7403	Elena Perez	8957
013	Xyz Corp	2457	Jane Lee	1350
013	Xyz Corp	2457	Henry Butler	7403
013	Xyz Corp	2457	Corey Harris	2457
013	Xyz Corp	2457	Elena Perez	8957
014	DayCo	8957	Jane Lee	1350
014	DayCo	8957	Henry Butler	7403
014	DayCo	8957	Corey Harris	2457
014	DayCo	8957	Elena Perez	8957

Cust_No	Cust_Name	Sales_Rep_No
011	MicroWidget	1350
012	MacroWidget	7403
013	Xyz Corp	2457
014	DayCo	8957

**Customer Relation**

Sales_Rep_Name	Sales_Rep_No
Jane Lee	1350
Henry Butler	7403
Corey Harris	2457
Elena Perez	8957

**Sales\_Rep Relation**

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- A. Customer X Sales\_Rep
- B. (Sales\_Rep.Sales\_Rep\_No = Customer.Sales\_Rep\_No (Sales\_Rep X Customer))
- C. (Customer X Sales\_Rep) ? Sales\_Rep.Sales\_Rep\_No = Customer.Sales\_Rep\_No
- D. Customer.Sales\_Rep\_No = Sales.sales\_Rep\_No (Customer X Sales\_Rep)

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**



**QUESTION 7**

Your enterprise must decide whether to use a database management system. Which of the following best describes the functionality of a DBMS?

- A. A DBMS provides the ability to control data access and limit the number of users at one time.
- B. A DBMS provides the ability to maintain databases while providing increased security for the database.
- C. A DBMS allows users to access the database while allowing the database administrator to define views particular to individual sets of users.
- D. A DBMS provides the ability to define, create and maintain databases while providing controlled access to databases.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 8**

Consider the Registration relation shown in the exhibit. Which of the following SQL statements would return all tuples that have course codes beginning with the letter M?

Registration_ID	Student_ID	Course_Code	First_Name	Last_Name
1001	S320	M3455	Teri	Chan
1002	S255	M3455	Carlos	Trujillo
1003	S511	A4343	Helen	Yang
1004	S812	S4511	Robert	Cray
1005	S320	A4343	Teri	Chan
1006	S255	M4422	Carlos	Trujillo
1007	S511	M4433	Helen	Yang
1008	S812	S2212	Robert	Cray

ActualTests

**Registration Relation**

- A. SELECT \* FROM  
Registration WHERE  
Course\_Code = #
- B. SELECT \* FROM  
Registration WHERE  
Course\_Code LIKE \_
- C. SELECT \* FROM  
Registration WHERE  
Course\_Code LIKE %
- D. SELECT \* FROM  
Registration WHERE  
Course Code = %

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 9**

Which subset of Structured Query Language (SQL) is used to create and name database entities?

- A. Data Query Language
- B. Database Entity Language
- C. Data Definition Language
- D. Data Manipulation Language

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 10**

Which statement best describes a candidate key?

- A. It is the primary key for an entity.
- B. It uniquely identifies every instance of an entity.
- C. One or more keys are joined together to form a composite key.
- D. One or more keys may be used to form a primary key.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 11**

Which of the following is a characteristic of the three-tier database architecture?

- A. A Web browser is used as the application server.
- B. The application logic is centralized on a dedicated server.
- C. A thick client is used to perform business application logic functions locally.
- D. Database application logic and database functionality are integrated and reside on a common server.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 12**

Which term describes an attribute or combination of attributes that uniquely identifies a row in a relation?

- A. Entity
- B. Domain
- C. Primary key
- D. Attribute group

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 13

Consider the relation shown in the exhibit. Which of the following SQL statements would return a relation that excludes all customers with a Satisfaction\_Rate of less than or equal to 80 unless the Sales\_Office is located in Atlanta?

Cust_No	Cust_Name	Satisfaction_Rate	Sales_Office	Sales_Rep_No
1011	MicroWidget	75	Atlanta	1350
1012	MacroWidget	90	New York	7403
1013	Xyz Corp	78	Los Angeles	2457
1014	DayCo	95	Atlanta	1350
1015	DigiTech	85	Chicago	3303
1016	DataTech	92	Los Angeles	2457
1017	UniSort	81	New York	7403

### Customers Relation

- A. SELECT \* FROM Customers  
WHERE Satisfaction\_Rate > 80  
OR Sales\_Office = Atlanta
- B. SELECT \* FROM Customers  
WHERE Satisfaction\_Rate <= 80  
AND Sales\_Office = Atlanta
- C. SELECT \* FROM Customers  
WHERE Satisfaction\_Rate >= 80;
- D. SELECT \* FROM Customers  
WHERE Satisfaction\_Rate >= 80  
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AND NOT Sales Office = Atlanta

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 14

What is the highest normal form of the relation(s) shown in the exhibit?

Emp_ID	Emp_Name	Dept_ID	Dept_Name	Mngr_ID	Mngr_Name
001	Lee	25	R & D	12	Ames
002	Smith	35	Marketing	22	Yee
003	Perez	25	R & D	12	Ames

## Employee Relation

- A. Third normal form
- B. Second normal form
- C. No normal form
- D. First normal form

**Correct Answer:** D

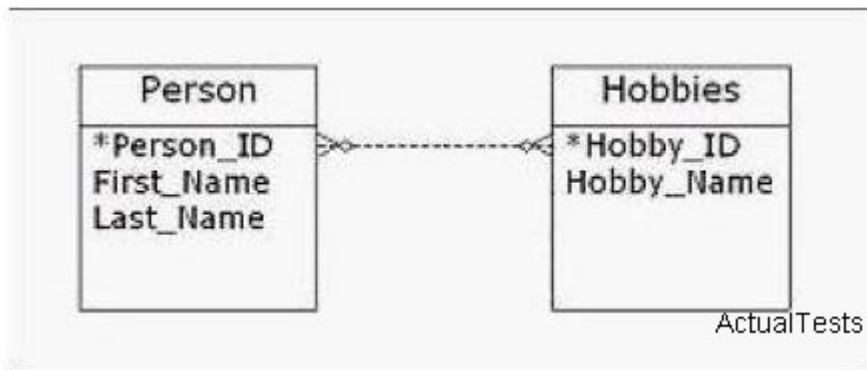
**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 15

Consider the entity-relationship (ER) diagram shown in the exhibit. Which type of relationship between the two entities is shown?



- A. A recursive relationship
- B. A many-to-many relationship
- C. A one-to-one relationship
- D. A one-to-many relationship

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 16

Consider the Registration relation shown in the exhibit. Which of the following SQL statements would return all tuples that have course codes beginning with the letter M?

- A. SELECT \* FROM  
Registration WHERE  
Course\_Code = #
- B. SELECT \* FROM  
Registration WHERE  
Course\_Code LIKE \_
- C. SELECT \* FROM  
Registration WHERE  
Course\_Code LIKE %
- D. SELECT \* FROM  
Registration WHERE  
Course Code = %

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 17

Consider the Information Engineering diagram shown in the exhibit for a building management company. Referential integrity must be maintained such that a building cannot be deleted when it has residents. Building\_ID, R\_ID, Room\_Count and Room\_Num are integer numbers, whereas Bldg\_Name, Location and Res\_Name are all represented by variable-length strings with a maximum of 20 characters. Which SQL statement best implements the relations shown in this diagram?



- A. CREATE TABLE BUILDING (  
Building\_ID INTEGER NOT NULL PRIMARY KEY,  
Bldg\_Name VARCHAR (20),  
Location VARCHAR (20),  
Room\_Count INTEGER );  
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CREATE TABLE RESIDENT (  
R\_ID NOT NULL PRIMARY KEY,  
Room\_Num INTEGER,  
Res\_Name VARCHAR (20),  
Building\_ID INTEGER NOT NULL,  
FOREIGN KEY Building\_ID REFERENCES RESIDENT (Building\_ID) ON DELETE NO CHECK);
- B. CREATE TABLE BUILDING (  
Building\_ID INTEGER NOT NULL PRIMARY KEY,  
Bldg\_Name VARCHAR (20),  
Location VARCHAR (20),  
Room\_Count INTEGER );  
CREATE TABLE RESIDENT (  
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R\_ID NOT NULL PRIMARY KEY,  
Room\_Num INTEGER,  
Res\_Name VARCHAR (20),  
Building\_ID INTEGER NOT NULL,  
FOREIGN KEY Building\_ID REFERENCES BUILDING (Building\_ID) ON DELETE NO CHECK  
ON UPDATE CASCADE);

- C. CREATE TABLE BUILDING (  
Building\_ID INTEGER NOT NULL PRIMARY KEY,  
Bldg\_Name VARCHAR (20),  
Location VARCHAR (20),  
Room\_Count INTEGER );  
CREATE TABLE RESIDENT (  
R\_ID NOT NULL PRIMARY KEY,  
Room\_Num INTEGER,  
Res\_Name VARCHAR (20),  
Building\_ID INTEGER NOT NULL,  
FOREIGN KEY Building\_ID REFERENCES BUILDING (Building\_ID) ON DELETE NO CHECK  
ON UPDATE CASCADE);
- D. CREATE TABLE BUILDING (  
Building\_ID INTEGER NOT NULL PRIMARY KEY,  
Bldg\_Name VARCHAR (20),  
Location VARCHAR (20),  
Room\_Count INTEGER );  
CREATE TABLE RESIDENT (  
R\_ID NOT NULL PRIMARY KEY,  
Room\_Num INTEGER,  
Res\_Name VARCHAR (20),  
Building\_ID INTEGER NOT NULL,  
FOREIGN KEY Building\_ID REFERENCES BUILDING (Building\_ID) ON DELETE NO CHECK  
ON UPDATE CASCADE);

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 18

Which of the following best describes the two-tier database architecture?

- A. The user accesses a database server using a terminal.
- B. The user interface, data-processing logic, database access and data validation functions are performed on a mainframe server.
- C. The user interface and data validation functions are performed by the client whereas the data- processing logic is performed on a server.
- D. The user interface and data-processing logic are performed by the client whereas the server handles database access and data validation functions.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 19

The exhibit shows a table called Recreation Relation that relates a unique student identification number and a sports activity with a fee for participating in that activity. The Student\_ID and Activity columns in the table are used together as a composite key. Which statement about the relation is correct?

Student_ID	Activity	Activity_Fee
1001	Bowling	50
1001	Racquetball	75
1002	Tennis	100
1003	Handball	35
1003	Swimming	40
1004	Bowling	50
1004	Fencing	125

**Recreation Relation**

- A. Activity\_Fee is a determinant of Activity.
- B. Activity\_Fee is partially dependent on the key.
- C. The table contains a transitive dependency.
- D. Activity\_Fee is a determinant of Activity and Student\_ID.

**Correct Answer:** B

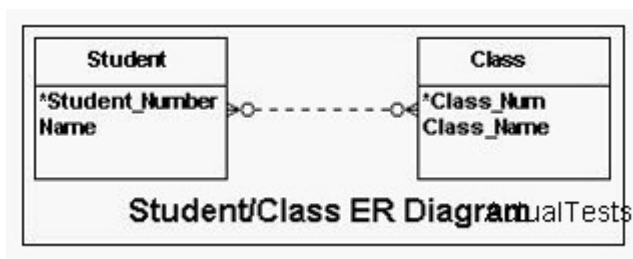
**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 20

Consider the entity-relation (ER) diagram shown in the exhibit. When the logical database design phase is completed, which of the following is a valid DBDL description of the base relations for the ER diagram?



- A. STUDENT(  
Student\_Number: integer NOT NULL  
Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number  
CLASS(  
Class\_Num: integer NOT NULL  
Class\_Name: integer NOT NULL)  
Primary Key Class\_Num
- B. STUDENT(  
Student\_Number: integer NOT NULL  
Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number  
CLASS(  
Class\_Num: integer NOT NULL  
Class\_Name: integer NOT NULL)

Primary Key Class\_Num  
Foreign Key Class\_Num References STUDENT

- C. STUDENT(  
Student\_Number: integer NOT NULL  
Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number  
STU\_CLASS(  
Student\_Number: integer NOT NULL  
Class\_Num: integer NOT NULL)  
Primary Key Student\_Number  
CLASS(  
Class\_Num: integer NOT NULL  
Class\_Name: integer NOT NULL)  
Primary Key Class\_Num
- D. STUDENT(  
Student\_Number: integer NOT NULL  
Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number  
STU\_CLASS(  
Student\_Number: integer NOT NULL  
Class\_Num: integer NOT NULL)  
Primary Key Student\_Number, Class\_Num  
CLASS(  
Class\_Num: integer NOT NULL  
Class\_Name: integer NOT NULL)  
Primary Key Class\_Num

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**



## Exam D

### QUESTION 1

Which of the following definitions best describes an entity?

- A. A relation
- B. Data about data
- C. Data stored in a table column
- D. An item about which information is stored

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 2

Several SQL operations are performed by User 1 to access the Fee information for Bowling in the Act\_Fee relation (shown in the exhibit). The first access returns a fee of 50. An unrelated SQL operation by another user updates the Bowling fee to 60. The second access by User 1 returns a fee of 60. What problem has occurred?

Student_ID	Activity
1001	Bowling
1002	Racquetball
1003	Tennis
1004	Racquetball

**Stu\_Act Relation**

Activity	Fee
Bowling	50
Racquetball	75
Tennis	100

**Act\_Fee Relation**

Student_ID	Activity	Fee
1001	Bowling	50
1002	Racquetball	75
1003	Tennis	100
1004	Racquetball	75

**Activity Relation**

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- A. Rollback
- B. Deadlock
- C. Dirty read
- D. No problem has occurred.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

Consider the entity-relationship (ER) diagram shown in the exhibit. What do the characters at the ends of the connecting line indicate?

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- A. Degree of a relation
- B. Cardinality of a relation
- C. Primary key of a relation
- D. Determinant of a relation

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 4

Consider the following SQL statement and the Orders relation shown in the exhibit:

What is the output of this SQL statement?

```
SELECT *
FROM Orders
WHERE NOT (Amount < 1000
AND Sales_Rep_No = 210);
```

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2001	11-04-01	1001	108	24.89
2004	12-14-01	1004	210	126.99
2006	01-14-02	1008	187	1216.69
2009	01-15-02	1008	350	926.89
2012	02-02-02	1001	108	816.09
2015	02-10-02	1004	210	1818.19
2016	02-15-02	1006	109	678.99

**Orders Relation**

A.

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2006	01-14-02	1008	187	1216.69
2015	02-10-02	1004	210	1818.19
2012	02/02/02	1001	108	816.09
2016	02/15/02	1006	109	678.99

B.

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2004	12-14-01	1004	210	126.99
2015	02-10-02	1004	210	1818.19
2012	02/02/02	1001	108	816.09
2016	02/15/02	1006	109	678.99

C.

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2015	02-10-02	1004	210	1818.19

D.

Order_No	Order_Date	Customer_No	Sales_Rep_No	Amount
2001	11/04/01	1001	108	24.89
2006	01/14/02	1008	187	1216.69
2009	01/15/02	1008	350	926.89
2012	02/02/02	1001	108	816.09
2015	02/10-02	1004	210	1818.19
2016	02/15/02	1006	109	678.99

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- A. A
- B. B
- C. C
- D. D

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 5**

Consider the following DBDL description of an entity: Teachers (teach\_num: variable length character string length 10 NOT NULL teach\_name: variable length character string length 10 NOT NULL) Primary Key: teach\_num which integrity constraint is satisfied?

- A. Entity integrity
- B. Necessary data
- C. Referential integrity
- D. Referential foreign integrity

**Correct Answer:** A

**Section:** (none)



**Explanation**

**Explanation/Reference:**

**QUESTION 6**

FROM Registration WHERE

Consider the following relational algebraic expression: Which of the following SQL Course\_Code = 'A4343'; statements is equivalent to this relational algebraic expression?

  Sales\_Rep\_No = 108 (Orders)

- A. SELECT Sales\_Rep\_No(108)  
FROM Orders;
- B. INSERT INTO Orders  
VALUES(Sales\_Rep\_No = 108)  
WHERE Sales\_Rep\_No = NULL;
- C. SELECT FROM Orders  
WHERE Sales\_Rep\_No = 108;
- D. SELECT FROM Orders  
WHERE Sales\_Rep\_No = ?08?

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 7**

Consider the Registration relation shown in the exhibit. Which of the following SQL statements would return the Registration2 relation from the Registration relation?

Registration_ID	Student_ID	Course_Code	First_Name	Last_Name
1001	S320	M3455	Teri	Chan
1002	S255	M3455	Carlos	Trujillo
1003	S511	A4343	Helen	Yang
1004	S812	S4511	Robert	Cray
1005	S320	A4343	Teri	Chan
1006	S255	M4422	Carlos	Trujillo
1007	S511	M4433	Helen	Yang
1008	S812	S2212	Robert	Cray

**Registration Relation**

1003	S511	A4343	Helen	Yang
1005	S320	A4343	Teri	Chan

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**Registration2 Relation**

- A. SELECT Course\_Code  
FROM Registration;
- B. SELECT \* FROM  
Registration WHERE  
Registration\_ID = 1003 AND  
Registration\_ID = 1005;
- C. SELECT \* FROM Registration  
WHERE Course\_Code = 'A4343';
- D. SELECT Registration\_ID, Student\_ID, First\_Name, Last\_Name

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**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

### QUESTION 8

Consider the Employee relation shown in the exhibit. A database manager wants to set up a view called Emp\_Dept that allows users to find employees and their department ID numbers. Which SQL statement will accomplish this?

ID	Last_Name	First_Name	Birth_Date	Dept_ID
0001	Vargas	Jose	09-15-70	032
0002	Jones	Elisa	12-12-55	042
0003	Chu	Helen	04-14-75	032
0004	Day	Danny	06-12-65	022

**Employee Relation**

Dept_ID	Dept_Name	Dept_Mngr	Dept_Ext
022	Sales	Reyes, Nancy	5432
032	Accounting	Yee, Cindy	1223
042	Finance	Ames, Joe	4675

Actual Tests

**Department Relation**

- A. CREATE VIEW Emp\_Dept AS SELECT Last\_Name, First\_Name, Dept\_ID FROM Employee;
- B. UPDATE VIEW Emp\_Dept AS SELECT \* FROM Employee;
- C. UPDATE VIEW Emp\_Dept AS SELECT Last\_Name, First\_Name, Dept\_ID FROM Employee;
- D. CREATE VIEW Emp\_Dept AS SELECT \* FROM Employee WHERE ID = 0001 AND ID = 0002 AND ID = 0003 AND ID = 0004;

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 9

Which subset of Structured Query Language (SQL) is used to limit access to a database or its data?

- A. Data Markup Language
- B. Data Control Language
- C. Data Formatting Language
- D. Data Manipulation Language

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 10**

Which type of relational integrity is violated if a primary key in a database has a null value?

- A. Entity integrity
- B. Domain integrity
- C. Domain constraints
- D. Referential integrity

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 11**

Consider the relation shown in the exhibit. Which of the following SQL statements would properly remove all tuples for New York customers?

Cust_No	Cust_Name	Satisfaction_Rate	Sales_Office	Sales_Rep_No
1011	MicroWidget	75	Atlanta	1350
1012	MacroWidget	90	New York	7403
1013	Xyz Corp	78	Los Angeles	2457
1014	DayCo	95	Atlanta	1350
1015	DigiTech	85	Chicago	3303
1016	DataTech	92	Los Angeles	2457
1017	UniSort	81	New York	7403

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**Customers Relation**

- A. DELETE \* FROM Customers  
WHERE Sales\_Office = New York;
- B. DELETE FROM Customers WHERE Sales\_Office = ew  
York?WHERE Sales\_Office = ?ew York?
- C. DELETE \* FROM Customers WHERE Sales\_Office = ew  
York?WHERE Sales\_Office = ?ew York?
- D. DELETE FROM Customers WHERE Sales\_Office NOT LIKE ew York? WHERE Sales\_Office NOT LIKE ?  
ew York?

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 12**

What is a data dictionary?

- A. A system catalog containing user data
- B. An area of the database that is directly accessible by the user
- C. Data that is stored in tables and is only accessible by the DBMS
- D. Metadata that is stored in tables and is only accessible by the DBMS

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 13**

Which statement best describes a procedural data manipulation language command?

- A. It contains a query language for retrieving data.
- B. It can be used only to manipulate data through a SQL interface.
- C. The user is not required to know how the underlying data structures are implemented.
- D. It requires that the user know how the underlying data structures are implemented.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 14**

Which area of database security involves maintaining access to enterprise data?

- A. Theft
- B. Privacy
- C. Availability
- D. Confidentiality

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 15**

Consider the table shown in the exhibit. Which relational algebraic operation would return Row 3?



Student_ID	Name	Major
1001	Chang	Mathematics
1002	Jones	Business
1003	Perez	Comp_Sci
1004	Nguyen	History
1005	Smith	Eng_Lit

**Student\_Major Relation**

1003	Perez	Comp_Sci
------	-------	----------

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- A. Union
- B. Selection
- C. Projection
- D. Difference

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 16

What is the highest normal form of the relation(s) shown in the exhibit?

Registration_ID	Student_ID	Course_Code	First_Name	Last_Name
1001	S320	M3455	Teri	Chan
1002	S255	M3455	Carlos	Trujillo
1003	S511	A4343	Helen	Yang
1004	S812	S4511	Robert	Cray
1005	S320	A4343	Teri	Chan
1006	S255	M4422	Carlos	Trujillo
1007	S511	M4433	Helen	Yang
1008	S812	S2212	Robert	Cray

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**Registration Relation**

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- A. Second normal form
- B. First normal form

- C. Boyce-Codd normal form
- D. Third normal form
- E. STUDENT( Student\_Number: integer NOT NULL Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number CLASS( Class\_Num: integer NOT NULL Class\_Name: integer NOT NULL) Primary Key Class\_Num
- F. STUDENT( Student\_Number: integer NOT NULL Name: variable length character string length 20 NOT NULL) Primary Key Student\_Number CLASS( Class\_Num: integer NOT NULL Class\_Name: integer NOT NULL) Primary Key Class\_Num Foreign Key Class\_Num References STUDENT
- G. STUDENT( Student\_Number: integer NOT NULL Name: variable length character string length 20 NOT NULL) Primary Key StudentMMumber STU\_CLASS( Student\_Number: integer NOT NULL Class\_Num: integer NOT NULL) Primary Key Student\_Number CLASS( Class\_Num: integer NOT NULL Class\_Name: integer NOT NULL) Primary Key Class\_Num

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 17

Your database administrator has disallowed a group of users from making alterations to the Employees table in your corporate database. The users, known as Group\_2, previously had full privileges with the Employees table. Which of the following SQL statements properly removes any alteration privileges from Group\_2?

- A. REVOKE INSERT,  
ActualTests.com  
UPDATE, DELETE ON  
Employees FROM Group\_2;
- B. REVOKE  
UPDATE FOR  
Employees  
FROM Group\_2;
- C. REVOKE INSERT,  
UPDATE, DELETE ON  
Employees FOR Group\_2;
- D. REVOKE  
UPDATE, DELETE  
FOR Employees  
FROM Group\_2;

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 18

Which type of dependency occurs when one attribute of a composite key is removed and the dependency still exists?

- A. 1:1
- B. Transitive
- C. Functional
- D. Partial functional

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 19

Consider the Project relation shown in the exhibit as well as the following SQL statement:

```
DELETE FROM Project
WHERE Cust_Name = Acme;
```

Which of the following tables shows the Project relation after execution of this SQL statement?

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

ActualTests

**Project Relation**

A.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

B.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1002	98-11	J & L	Quality Analysis	Start	Chang
1001	99-02	Acme	Process Analysis	Done	Jones
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

C.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1001	98-01	Acme	Reflow Study	Done	Rubio
1002	98-11	J & L	Quality Analysis	Start	Chang
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

D.

Cust_ID	Proj_ID	Cust_Name	Proj_Description	Status	Manager
1002	98-11	J & L	Quality Analysis	Start	Chang
1003	99-12	Bravo Co	Efficiency Study	Start	Doe

ActualTests

- A. A
- B. B
- C. C
- D. D

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 20

Consider the relations shown in the exhibit. Which of the following SQL statements would enter data from the Customers relation into the Atlanta\_Customers relation?

Cust_No	Cust_Name	Satisfaction_Rate	Sales_Office	Sales_Rep_No
1011	MicroWidget	75	Atlanta	1350
1012	MacroWidget	90	New York	7403
1013	Xyz Corp	78	Los Angeles	2457
1014	DayCo	95	Atlanta	1350
1015	DigiTech	85	Chicago	3303
1016	DataTech	92	Los Angeles	2457
1017	UniSort	81	New York	7403

**Customers Relation**

Cust_No	Cust_Name	Satisfaction_Rate	Sales_Rep_No
---------	-----------	-------------------	--------------

**Atlanta\_Customers Relation**

- A. INSERT INTOAtlanta\_Customers  
VALUES( SELECT \* FROM  
Customer s WHERE Sales\_Office =  
Atlanta
- B. INSERT INTOAtlanta\_Customers  
SELECT \* FROM Customers  
WHERE Sales\_Office = Atlanta
- C. INSERT INTOAtlanta\_Customers SELECT Cust\_No,  
Cust\_Name, Satisfaction\_Rate, Sales\_Rep\_No FROM Customers WHERE Sales\_Office = Atlanta
- D. INSERT INTOAtlanta\_Customers SELECT Cust\_No,  
Cust\_Name, Sales\_Office, Sales\_Rep\_No FROM Customers WHERE Sales\_Office = Atlanta

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

## Exam E

### QUESTION 1

Consider the table for an employee database shown in the exhibit. What is the degree of the table?

Emp_ID	First_Name	Last_Name	SSN	Birth_Date
0001	Helen	Lee	001-01-6001	12-05-75
0002	James	Smith	002-12-7002	10-25-76
0003	Eliza	Perez	003-21-9003	02-15-80
0004	Samuel	Hayes	004-04-1004	11-07-71

### Employee Relation

- A. 25
- B. 5
- C. 4
- D. 20

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 2

What improvement can be made to file-based databases to overcome their limitations?

- A. Implement a tabular structure.
- B. Gather files in a distributed repository.
- C. Use a hierarchical database file system.
- D. Tightly couple database structure to database application programs.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

NULL) Primary Key Class\_Num

Consider the Information Engineering diagram shown in the exhibit. Which DBDL definition best describes this diagram?



- A. BUILDING(Building\_ID, Bldg\_Name, Location, Room\_Count) Primary Key Building\_ID RESIDENT(R\_ID, Room\_Num, Res\_Name, Building\_ID) Primary Key R\_ID
- B. BUILDING(Building\_ID, Bldg\_Name, Location, Room\_Count) Primary Key BUILDING RESIDENT(R\_ID, Room\_Num, Res\_Name, Building\_ID) Primary Key RESIDENT
- C. BUILDING(Building\_ID, Bldg\_Name, Location, Room\_Count) Primary Key BUILDING Foreign Key BUILDING(Building\_ID) references RESIDENT(Building\_ID) RESIDENT(R\_ID, Room\_Num, Res\_Name, Building\_ID) Primary Key RESIDENT
- D. BUILDING(Building\_ID, Bldg\_Name, Location, Room\_Count) Primary Key Building\_ID RESIDENT(R\_ID, Room\_Num, Res\_Name, Building\_ID) Primary Key R\_ID Foreign Key Building\_ID references BUILDING(Building\_ID)

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 4

Consider the Information Engineering diagram in the exhibit showing the relations BUILDING and RESIDENT. What is the relationship between BUILDING and RESIDENT?



A 1:1

A. 1:N

B. N:1

C. M:N

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 5**

You enterprise must decide whether to use a database management system. Which of the following lists four advantages of using a DBMS?

- A. Management of data redundancy, increased data integrity, increased data dependence, and increased application program flexibility.
- B. Consistency of data, adherence to standards, managed concurrency, and increased software complexity.
- C. Increased data access, increased data backup and recovery, data sharing, and consistency of data.
- D. Increased data security, increased data integrity, increased data independence, and decreased data separation.

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 6**

Which of the following occurs in a relation when records are added or removed?

- A. The number of domains changes.
- B. The attributes in the domain change.
- C. The cardinality of the relation is fixed but the degree varies.
- D. The degree of the relation is fixed but the cardinality varies.

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 7**

Your enterprise is creating a relation (shown in the exhibit) that tracks parts and suppliers. Which situation would occur if new supplier information were entered in the relation before any information about specific parts?

Part_ID	Part_Name	Description	Supp_Name	Supp_Addr	Supp_City	Supp_State
0312	bolt	hexagon bolt	Adams Bolt	12 Oak St	Ames	IA
0322	screw	capscrew	Huan Supply	22 Elm St	Ames	IA
0332	socket screw	button head	Huan Supply	22 Elm St	Ames	IA

- A. An update anomaly and an insertion anomaly would occur.
- B. An insertion anomaly would occur.
- C. A deletion anomaly would occur.
- D. A deletion anomaly and an update anomaly would occur.

**Correct Answer: B**

**Section: (none)**



### Explanation

Explanation/Reference:

### QUESTION 8

The creation of intermediate entities occurs during the logical database design phase for an enterprise. It is used to resolve which types of relationships?

- A. One-to-many and recursive
- B. Complex, recursive, and many-to-many
- C. Redundant, recursive, and one-to-many
- D. One-to-many and one-to-one

**Correct Answer: B**

**Section: (none)**

### Explanation

Explanation/Reference:

### QUESTION 9

Your enterprise is developing a database system that will contain highly sensitive data. Security of the data will take priority over database processing speed. Which database protection technique should be employed?

- A. Backups
- B. User views
- C. Encryption
- D. Integrity controls

**Correct Answer: C**

**Section: (none)**

### Explanation

Explanation/Reference:

### QUESTION 10

The exhibit shows a table called Housing Relation that relates a unique student identification number with a dormitory building and a room fee for that building. Each building charges only one fee and a student can live in only one building. The key for the Housing Relation is Student\_ID.

This table is in which normal form?

Student_ID	Building	Fee
1001	Espalade	400
1002	Remington	550
1003	Gardener	450
1004	Regents	700
1005	Delaforte	550

## Housing Relation

- A. 1NF
- B. 1NF and 2NF
- C. 1NF, 2NF and 3NF
- D. 1NF, 2NF, 3NF and BCNF

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 11

The exhibit shows a relation for a company projects. Which candidate key(s) would best serve as the primary key for this relation?

Proj_ID	Item_Num	Item_Qty	Item_Price	S_Date	E_Date	Total_Cost
1001	3211	50	.70	2-2-99	2-2-00	3.50
1001	4311	100	.50	2-2-99	2-2-00	50.00
1002	3211	40	1.00	4-4-00	5-9-00	40.00
1003	5211	200	.50	5-5-00	7-8-00	100.00

Actual Tests

## Project Relation

- A. S\_Date and E\_Date
- B. ProjJD
- C. Item\_Num and E\_Date
- D. Proj\_ID and Item\_Num

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 12

Which of the following best describes a composite key?

- A. A composite key is a primary key that consists of the first two attributes of a relation.
- B. A composite key is a primary or foreign key defined by its parent keys.
- C. A composite key is a foreign key that consists of the same attributes as the primary key from a related table.
- D. A composite key is a primary or foreign key that consists of two or more attributes of a relation.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 13**

Consider the following database information:

domain s\_id: integer domain grd: fixed length  
character string length 1

STUDENT\_GRADE(  
Student\_Number: s\_id NOT NULL  
Grade: grd ) Primary Key  
Student\_Number

During which phase of the database design process would this information be developed?

- A. Logical
- B. Physical
- C. Conceptual
- D. Implementation

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 14**

Consider the Recreation relation in the exhibit. A data operation that changes one of the tuples for Student\_ID 1003 must be performed. It is necessary to change one of the activities from swimming to tennis. The Student\_ID and Activity attributes make up the primary key for the Recreation relation. All related information must be altered, as well. Which SQL statement or statements would best accomplish this?

Student_ID	Activity	Activity_Fee
1001	Bowling	50
1001	Racquetball	75
1002	Tennis	100
1003	Handball	35
1003	Swimming	40
1004	Bowling	50
1004	Fencing	125

Actual Tests

**Recreation Relation**

- A. UPDATE Recreation SET Activity,  
Activity\_Fee ('Tennis',100) WHERE

Student\_ID = 1003;

- B. UPDATE TABLE Recreation ALTER COLUMN ACTIVITY  
SET ACTIVITY = 'Tennis', Activity\_Fee = 100 WHERE  
Student\_ID = 1003 AND Activity = wimming?AND Activity = ?wimming?
- C. UPDATE Recreation SET Activity =  
'Tennis', Activity\_Fee = 100 WHERE  
Student\_ID = 1003 AND Activity =  
'Swimming';
- D. DELETE Activity FROM  
Recreation WHERE  
ActualTests.com  
Student\_ID = 1003; INSERT  
INTO Recreation VALUES (1003, 'Tennis', 100);

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 15

Which process is used to prevent the current database operation from reading or writing a data item while that data item is being accessed by another operation?

- A. Lock
- B. Deadlock
- C. Time stamp
- D. Transaction

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 16

Your company must choose which type of database to use for a new project. Which of the following lists three characteristics of file-based database systems?

- A. Repetition of data, application program flexibility, and data centralization
- B. Incompatibility of files, tabular data structures, and data dependence
- C. Separation of data, repetition of data, and data independence
- D. Application program inflexibility, data dependence, and separation of data

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 17

Consider the Information Engineering diagram shown in the exhibit. Building\_ID, R\_ID, Room\_Count and Room\_Num are integer numbers, whereas Bldg\_Name and Res\_Name are represented by variable-length

strings with a maximum of 20 characters. Location can be up to 50 characters long, and no building has more than 600 rooms. Which SQL statement best implements the BUILDING relation shown in this diagram?



- A. `CREATETABLE BUILDING ( Building_ID NOT NULL PRIMARY KEY, Bldg_Name, Location, Room_Count);`
- B. `CREATETABLE BUILDING ( Building_ID NOT NULL PRIMARY KEY, Bldg_Name, Location, Room_Count, FOREIGN KEY Building_ID REFERENCES BUILDING (Building_ID));`
- C. `CREATETABLE BUILDING (Building_ID INTEGER NOT NULL PRIMARY KEY, Bldg_Name VARCHAR (20), Location VARCHAR (50),`
- D. `CREATETABLE BUILDING (Building_ID INTEGER NOT NULL PRIMARY KEY, Bldg_Name VARCHAR (20), Location VARCHAR (50), Room_Count INTEGER CHECK (Room_Count > Room_Count INTEGER CHECK ( -1 And Room_Count < 601)); Room_Count > -1 Or Room_Count < 601));`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 18

Consider the following four database design activities:

- 1 - Design user views.
- 2 - Select a DBMS.
- 3 - Apply normalization.
- 4 - Determine entities.

Which choice shows the correct ordering of these activities, from first to last, by assigned numbers?

- A. 1,2,3,4
- B. 3,4,1,2
- C. 4,3,1,2
- D. 4,2,3,1

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 19**

A large enterprise uses a two-tier database architecture and runs complex database applications. Which term best describes the client in this system?

- A. Fat client
- B. Enterprise client
- C. Thin client
- D. Terminal client

**Correct Answer: A**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 20**

The exhibit shows a table called Activity Relation that relates a unique student identification number with a sports activity and a fee for participating in that activity. A student can participate in only one activity. The key for the relation is Student\_ID. What consequence would occur if the tuple for Student\_ID 1001 were removed?

Student_ID	Activity	Fee
1001	Bowling	50
1002	Racquetball	75
1003	Tennis	100
1004	Racquetball	75

ActualTests

**Activity Relation**

- A. An update anomaly would occur.
- B. An insertion anomaly would occur.
- C. A deletion anomaly would occur.
- D. Both an insertion anomaly and a deletion anomaly would occur.

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

## Exam F

### QUESTION 1

With regard to databases, what is normalization?

- A. The process of reducing the cardinality of a relation
- B. The process of organizing and refining relations
- C. The process of duplicating data to reduce the number of tables
- D. The process of limiting data stored in a table to a specific range of values

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 2

Which three pieces of information did E.F. Codd describe as necessary to retrieve a data value from a relational database?

- A. Attribute, domain, and tuple
- B. Entity, relation name, and domain
- C. Table name, primary key, and entity
- D. Attribute, relation name, and primary key

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

What is a virtual table?

- A. A virtual table is a relation created as the result of data manipulation; it exists only in computer memory, and is not a permanent part of the database.  
ActualTests.com
- B. A virtual table is a relation stored in the database; it is used when multiple users access the same relation in a database.
- C. A virtual table is a relation derived from the database data dictionary; it contains metadata about a base relation. A virtual table is a relation derived from the database?data dictionary; it contains metadata about a base relation.
- D. A virtual table is a relation that consists of primary and foreign keys for a particular set of relations in a database.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 4

Your enterprise has reached the conceptual design phase for a database project. What is the desired goal at

the end of this design phase?

- A. A set of normalized relations
- B. A reviewed entity-relationship (ER) model
- C. An entity-relationship (ER) model with no redundant data
- D. A set of denormalized relations

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 5**

In which phase of database design do you identify entities, attribute domains, and relationships?

- A. Logical
- B. Physical
- C. Application
- D. Conceptual

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 6**

Consider the Dept1\_Parts and Dept2\_Parts relations shown in the exhibit.  
Which of the following SQL statements would create a set difference of the two relations with the widest variety of Structured Query Language dialects?



Part_ID	Part_Name	Description	Supp_ID
0312	bolt	hexagon bolt	221
0322	screw	capscrew	441
0332	socket screw	button head	551
0342	flange	blind flange	331
0352	socket screw	countersunk	441

**Dept1\_Parts Relation**

Part_ID	Part_Name	Description	Supp_ID
0302	flange	slip-on flange	331
0322	screw	capscrew	441
0332	socket screw	button head	551
0362	bolt	studbolt	441

ActualTests

**Dept2\_Parts Relation**

- A. SELECT \* FROM  
Dept1\_Parts  
EXCEPT(SELECT  
Part\_ID FROM  
Dept2\_Parts);
- B. SELECT \* FROM  
Dept1\_Parts MINUS  
(SELECT Part\_ID  
FROM Dept2\_Parts);  
ActualTests.com
- C. SELECT \* FROM  
Dept1\_Parts  
DIFFERENCE  
(SELECT Part\_ID  
FROM Dept2\_Parts);
- D. SELECT \* FROM  
Dept1\_Parts WHERE  
Part\_ID NOT IN  
(SELECT Part\_ID FROM  
Dept2\_Parts);

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### **QUESTION 7**

Consider the Information Engineering diagram shown in the exhibit. Building\_ID, R\_ID, Room\_Count and Room\_Num are integer numbers, whereas Bldg\_Name,

Location and Res\_Name are all represented by variable-length strings with a maximum of 20 characters.

Which SQL statement best implements the RESIDENT relation shown in this diagram?



- A. CREATE TABLE RESIDENT (  
R\_ID INTEGER NULL PRIMARY KEY,  
Room\_NumFLOAT,  
Res\_NameVARCHAR,  
Building\_IDINTEGER NULL,  
FOREIGN KEY Building\_ID REFERENCES BUILDING (Building\_ID));
- B. CREATE TABLE RESIDENT (  
R\_ID INTEGER NOT NULL PRIMARY KEY,  
Room\_NumBINARY,  
Res\_NameVARCHAR (20),  
Building\_IDINTEGER NOT NULL,  
FOREIGN KEY Building\_ID REFERENCES BUILDING (Building\_ID));
- C. CREATE TABLE RESIDENT (  
ActualTests.com  
R\_ID INTEGER NOT NULL PRIMARY KEY,  
Room\_NumINTEGER,  
Res\_NameVARCHAR (20),  
Building\_IDINTEGER NOT NULL);
- D. CREATE TABLE RESIDENT (  
R\_ID INTEGER NOT NULL PRIMARY KEY,  
Room\_NumINTEGER,  
Res\_NameVARCHAR (20),  
Building\_IDINTEGER NOT NULL,  
FOREIGN KEY Building\_ID REFERENCES BUILDING (Building\_ID));

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 8

Which term describes one or more database operations that are executed as a single unit?

- A. Update
- B. Transaction
- C. Encapsulation
- D. Operational group

**Correct Answer:** B

**Section:** (none)

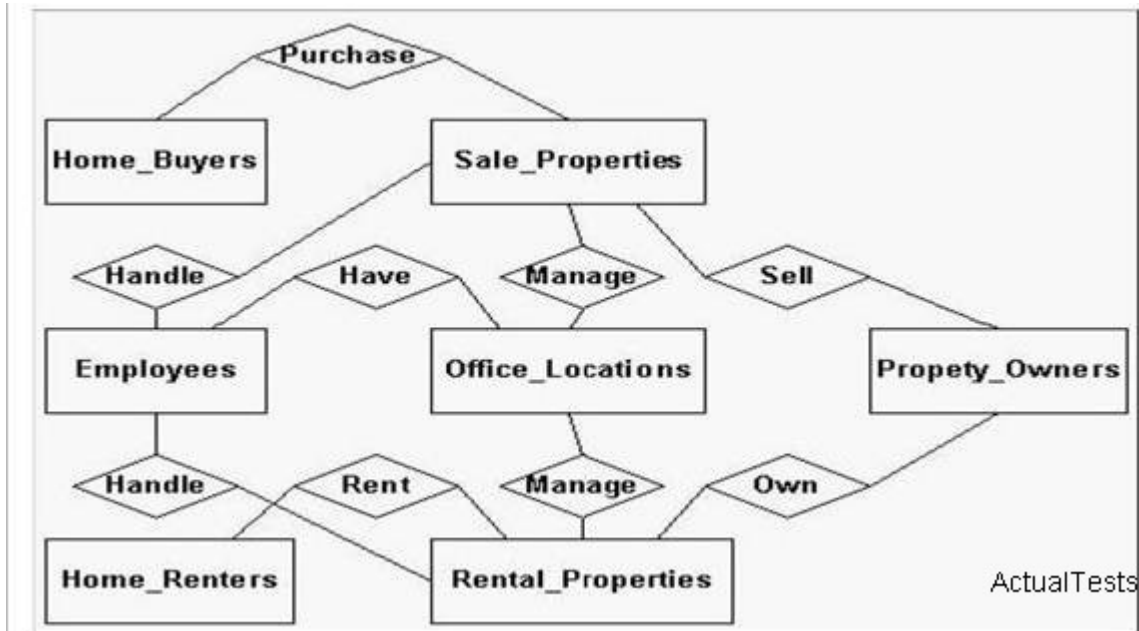
## Explanation

### Explanation/Reference:

#### QUESTION 9

Your enterprise is involved in planning a database project. The exhibit shows the result of one phase of the database design life cycle.

Which term best describes the diagram shown in the exhibit?



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- A. Information Engineering (IE) data model
- B. Corporate data model
- C. Database requirements model
- D. ERD model

**Correct Answer:** B

**Section:** (none)

**Explanation**

### Explanation/Reference:

#### QUESTION 10

Consider the following relations shown in the exhibit.

Which of the following SQL statements would return the Customers2 relation from the Customers relation?

Cust_No	Cust_Name	Satisfaction_Rate	Sales_Office	Sales_Rep_No
1011	MicroWidget	75	Atlanta	1350
1012	MacroWidget	90	New York	7403
1013	Xyz Corp	78	Los Angeles	2457
1014	DayCo	95	Atlanta	1350
1015	DigiTech	85	Chicago	3303
1016	DataTech	92	Los Angeles	2457
1017	UniSort	81	New York	7403

**Customers Relation**

1015	DigiTech	85	Chicago	3303
1017	UniSort	81	New York	7403

ActualTests

**Customers2 Relation**

- A. SELECT \* FROM Customers  
WHERE Satisfaction\_Rate <= 80  
OR Satisfaction\_Rate >= 90;
- B. SELECT \* FROM Customers WHERE  
Satisfaction\_Rate IN (80 AND 90);
- C. SELECT \*FROM Customers  
WHERE Satisfaction\_Rate >= 80  
AND Satisfaction\_Rate <= 89;
- D. SELECT \* FROM  
Customers WHERE  
Satisfaction\_Rate  
BETWEEN (80, 90);

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 11

Which statement is used to define a named group of related tables, views, domains and other database objects?

- A. CREATE
- B. CREATE TABLE
- C. CREATE DOMAIN
- D. CREATE SCHEMA

**Correct Answer: D**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 12**

Which of the following best describes the ON DELETE NO ACTION referential integrity constraint?

- A. If a parent key is deleted, any child keys referenced by the parent key are automatically deleted.
- B. If a parent key is deleted, no test is made for referential integrity.
- C. If any child key references a parent key, the record containing the parent key cannot be deleted.
- D. If a parent key is deleted, all child keys are automatically set to a specified value.

**Correct Answer:** C

**Section:** (none)

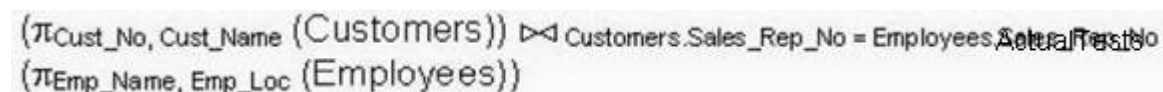
**Explanation**

**Explanation/Reference:**

**QUESTION 13**

Consider the following relational algebraic expression:

Which of the following SQL statements is equivalent to this relational algebraic expression?



The image shows a relational algebraic expression:  $(\pi_{Cust\_No, Cust\_Name} (Customers)) \bowtie_{Customers.Sales\_Rep\_No = Employees.Sales\_Rep\_No} (\pi_{Emp\_Name, Emp\_Loc} (Employees))$ . The expression represents a join between the Customers and Employees tables based on the Sales\_Rep\_No attribute.

- A. SELECT \* FROM Customers, Employees WHERE Sales\_Rep\_No = Cust\_No;
- B. SELECT Cust\_No, Cust\_Name, Emp\_Name, Emp\_Loc FROM Customers, Employees WHERE Customers.Sales\_Rep\_No = Employees.Sales\_Rep\_No;
- C. SELECT Cust\_No, Cust\_Name, Emp\_Name, Emp\_Loc FROM Customers, Employees WHERE Employees.Sales\_Rep\_No = Customers.Sales\_Rep\_No;
- D. SELECT \* FROM Customers, Employees WHERE Customers.Sales\_Rep\_No = Employees.Sales\_Rep\_No;

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 14**

What is a domain?

- A. A normalized set of data applicable to a particular relation
- B. A combination of attributes for a relation
- C. A definition of permissible values for one or more attributes
- D. A set of permissible values for one or more relations

**Correct Answer:** C

**Section:** (none)

### Explanation

### Explanation/Reference:

#### QUESTION 15

For the Employee relation shown in the exhibit, which set of column value holds the complete tuple for the employee named James Smith?

Emp_ID	First_Name	Last_Name	Birth_Date
0001	Helen	Lee	12-05-75
0002	James	Smith	10-25-76
0003	Eliza	Perez	02-15-80
0004	Samuel	Hayes	11-07-71

Employee Relation

- A. 0002, James, Smith
- B. 0002, James, Smith,10-25-76
- C. First\_Name, James, Last\_Name, Smith
- D. Emp\_ID, 0002, First\_Name, James, Last\_Name, Smith

**Correct Answer:** B

**Section:** (none)

### Explanation

### Explanation/Reference:

#### QUESTION 16

Which pair of relational algebraic operations requires union compatibility?

- A. Union and join
- B. Selection and projection
- C. Intersection and difference
- D. Cartesian product and intersection

**Correct Answer:** C

**Section:** (none)

### Explanation

### Explanation/Reference:

#### QUESTION 17

Consider the following table as well as the Dept1\_Parts and Dept2\_Parts relations shown in the exhibit:  
Which of the following relational algebraic expressions would result in the given table?

Dept1\_Parts  $- \pi_{\text{Part\_ID}}(\text{Dept2\_Parts})$

Part_ID	Part_Name	Description	Supp_ID
0312	bolt	hexagon bolt	221
0322	screw	capscrew	441
0332	socket screw	button head	551
0342	flange	blind flange	331
0352	socket screw	countersunk	441

**Dept1\_Parts Relation**

Part_ID	Part_Name	Description	Supp_ID
0302	flange	slip-on flange	331
0322	screw	capscrew	441
0332	socket screw	button head	551
0362	bolt	studbolt	441

**Dept2\_Parts Relation**

Part_ID	Part_Name	Description	Supp_ID
0302	flange	slip-on flange	331
0312	bolt	hexagon bolt	221
0322	screw	capscrew	441
0332	socket screw	button head	551
0342	flange	blind flange	331
0352	socket screw	countersunk	441
0362	bolt	studbolt	441

- A. Dept1\_Parts u Dept2\_Parts
- B. Dept2\_Parts - Dept1\_Parts
- C. Dept1\_Parts ù Dept2\_parts
- D. Dept1\_Parts x Dept2\_Parts

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 18**

What is the most important service provided by a database management system?

- A. Provides support for a data manipulation language
- B. Allows users to store data in a distributed data repository
- C. Provides support for data formatting language commands
- D. Translates procedural commands into non-procedural commands

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 19**

Consider the table for an employee database shown in the exhibit. What is the cardinality of the table?

Emp_ID	First_Name	Last_Name	SSN	Birth_Date
0001	Helen	Lee	001-01-6001	12-05-75
0002	James	Smith	002-12-7002	10-25-76
0003	Eliza	Perez	003-21-9003	02-15-80
0004	Samuel	Hayes	004-04-1004	11-07-71

Actual Tests

### Employee Relation

- A. 6
- B. 20
- C. 4
- D. 25

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 20**

What is a relational database domain?

- A. A group of attributes
- B. A set of permissible tuple values
- C. A collection of related data items
- D. A set of permissible attribute values

**Correct Answer:** D



**Section: (none)**  
**Explanation**

**Explanation/Reference:**