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**Started on** Tuesday, 8 March 2022, 10:00 AM

**State** Finished

**Completed on** Tuesday, 8 March 2022, 10:39 AM

**Time taken** 39 mins 21 secs

**Marks** 39.00/50.00

**Grade** 7.80 out of 10.00 (78%)

Question **1**

Complete

Mark 0.00 out of 2.00

Suppose we have two relations location(city, state, country) and weather(city, temperature, humidity, condition). What will be the query for finding the countries where the weather condition is cloudy.

- ☐ Select country from location where city in (select city from location where condition = 'cloudy');
- ☐ Select country from location where condition = 'cloudy';
- ☒ Select country from location where city intersect (select city from weather where condition = 'cloudy');
- ☐ Select country from location where city union (select city from weather where condition = 'cloudy');
- ☐ Select country from location where city in (select city from weather where condition = 'cloudy')

Question **2**

Complete

Mark 1.00 out of 1.00

The following are functions of a DBMS except \_\_\_\_\_ .

- ☐ Processing Data
- ☐ Administrating Databases
- ☐ Creating Databases
- ☒ Creating and processing forms

Question **3**

Complete

Mark 1.00 out of 1.00

Logical database design describes base relations, file organizations, and indexes that are used to achieve efficient access to data.

Select one:

- ☐ True
- ☒ False

Question **4**

Complete

Mark 1.00 out of 1.00

Which one of the following keyword is used to find out the number of values in a column?

- ☐ Sum
- ☐ Add
- ☐ Total
- ☒ Count

Question **5**

Complete

Mark 1.00 out of 1.00

Each entity is described by \_\_\_\_\_.

- ☒ Attribute
- ☐ Entity
- ☐ Relationship
- ☐ None of these

Question **6**

Complete

Mark 1.00 out of 1.00

In the relational schema, any many-to-one and one-to-many relationship sets that are total on the many-side can be represented by,

- ☐ Adding an extra attribute to the "one" side, containing the primary key of the "many" side
- ☐ Adding a null value to the "many" side, which is not having association with one side
- ☒ Adding an extra attribute to the "many" side, containing the primary key of the "one" side
- ☐ Adding a null value to the "one" side which is not having association with many side

Question **7**

Complete

Mark 0.00 out of 2.00

An ER model of a database consists of entity types A and B. These are connected by a relationship R which does not have its own attribute. Under which one of the following conditions, can the relational table for R be merged with that of A?

- ☐ Relationship R is many-to-one from B to A and the participation of A in R is partial.
- ☐ Relationship R is one-to-many from B to A and the participation of A in R is total.
- ☐ Relationship R is one-to-many from B to A and the participation of A in R is partial.
- ☒ Relationship R is many-to-one from B to A and the participation of A in R is total.

Question **8**

Complete

Mark 1.00 out of 1.00

Data dictionary is responsible for keeping the,

- ☐ Data about specific users
- ☒ Data about data
- ☐ Data about user
- ☐ Data about relation

Question **9**

Complete

Mark 2.00 out of 2.00

Let R and S be two relations with the following schema

R (P,Q,R1,R2,R3)

S (P,Q,S1,S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent?

I.  $\Pi_P (R \bowtie S)$

II.  $\Pi_P (R) \bowtie \Pi_P (S)$

III.  $\Pi_P (\Pi_{P,Q} (R) \cap \Pi_{P,Q} (S))$

IV.  $\Pi_P (\Pi_{P,Q} (R) - (\Pi_{P,Q} (R) - \Pi_{P,Q} (S)))$

- ☐ Only I and III
- ☐ Only I and II
- ☐ Only I, II and III
- ☒ Only I, III and IV

Question **10**

Complete

Mark 1.00 out of 1.00

Creating specializations of employees based on all possible Categories (Gen, SC, ST, OBC, EWS etc.) satisfies which of the following constraints?

- ☒ Total
- ☐ Partial
- ☒ Disjoint
- ☐ Overlapping

Question **11**

Complete

Mark 1.00 out of 1.00

Which of the following SQL command is used to select only one copy of each set of duplicate rows?

- ☐ Select Unique
- ☐ Select Top 1
- ☐ All of the above
- ☐ Select Different
- ☒ Select Distinct

Question **12**

Complete

Mark 2.00 out of 2.00

Suppose we have two relations location(city, state, country) and weather(city, temperature, humidity, condition). What will be the query for finding the names of all cities with their temperature, humidity and countries.

- ☐ Select location.city, temperature, humidity, country from weather, location where city = select city from location where location.city = weather.city;
- ☐ Select city, temperature, humidity, country from location;
- ☐ Select weather.city, temperature, humidity, country from weather, location;
- ☒ Select location.city, temperature, humidity, country from weather, location where weather.city=location.city;

Question **13**

Complete

Mark 2.00 out of 2.00

In an E-R diagram, If there is a directed double line ( $=>$ ) from the relationship "advisor" to the entity set "instructor" and undirected single line from the relationship "advisor" to the entity set "student", then it denotes,

- ☐ A student can have more than one instructor as an advisor and the instructor must be an advisor of atleast one student
- ☒ A single student can not have more than one instructor as an advisor and the instructor must be an advisor of atleast one student
- ☐ An instructor can be an advisor of more than one student and a student must have atleast one advisor
- ☐ An instructor can not be an advisor of more than one student and a student must have atleast one advisor

Question **14**

Complete

Mark 2.00 out of 2.00

Suppose we have the relations  $X1(a, b)$  and  $X2(c, d)$ . Consider the following query,

*select distinct a, b  
from X1, X2*

The output of the above query will definitely be the same as  $X1$  if,

- ☐  $X1$  and  $X2$  have no duplicates
- ☐  $X2$  has no duplicates and  $X1$  is non-empty
- ☒  $X1$  has no duplicates and  $X2$  is non-empty
- ☐  $X1$  and  $X2$  have the same number of tuples

Question **15**

Complete

Mark 1.00 out of 1.00

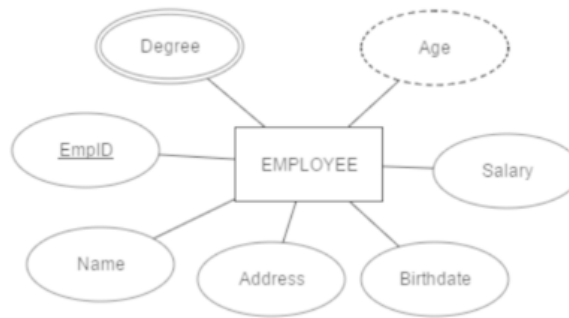
Which is not a data model?

- ☐ Entity Relationship Model
- ☐ Hierarchical data model
- ☐ Semi-structured data model
- ☐ Relational model
- ☒ Semantics data model

Question **16**

Complete

Mark 1.00 out of 1.00



The following diagram is having the entity,

- ☐ Degree
- ☐ EmpID
- ☒ Employee
- ☐ Derived Birthdate

Question **17**

Complete

Mark 1.00 out of 1.00

The purpose of the E-R diagram is to,

- ☐ Simplify Database Programming
- ☐ Simplify Database Access
- ☐ Simplify Database Organization
- ☒ Simplify Database Design

Question **18**

Complete

Mark 1.00 out of 1.00

The structural constraint that specifies the minimum number of relationship instances that an entity can participate in is \_\_\_\_\_.

- ☐ Existence Dependency
- ☒ Participation Constraint
- ☐ Cardinality Ratio
- ☐ Identifying Relationship

Question **19**

Complete

Mark 1.00 out of 1.00

An ERs purpose is to support a user's perception of the data and conceal the technical aspects associated with database design.

Select one:

- ☒ True
- ☐ False

Question **20**

Complete

Mark 0.00 out of 1.00

Weak entities MUST satisfy which of the following structural constraints.

- ☐ Existence Dependency
- ☐ Cardinality Ratio
- ☒ Identifying Relationship
- ☐ Participation Constraint



Question **21**

Complete

Mark 2.00 out of 2.00

Find the names of those students with section and marks whose marks greater than 60 but section must be either A or B.

- ☐ Select name, section, marks from student\_data where section = A and section = B and marks > 60;
- ☐ Select name, section, marks from student\_data where section = A and section = B or marks > 60;
- ☐ Select name, section, marks from student\_data where section = A or B and marks > 60;
- ☒ Select name, section, marks from student\_data where section = A or section = B and marks > 60;
- ☐ Select name, section, marks from student\_data where section = A or section = B or marks > 60;

Question **22**

Complete

Mark 1.00 out of 1.00

In the following Query, which of the following can be placed in the Query's blank portion to display the salary from highest to lowest amount, and sorting the employs name alphabetically?

```
SELECT *  
FROM instructor  
ORDER BY salary _____, name _____;
```

- ☒ Desc, Asc
- ☐ Ascending, Descending
- ☐ Asc, Desc
- ☐ Descending, Ascending

Question **23**

Complete

Mark 0.00 out of 1.00

What will be the output of the following query,

```
select distinct T.name  
from instructor as T, instructor as S  
where T.salary > S.salary and S.dept name = 'Biology';
```

- ☐ Find names of instructors with salary greater than that of some instructor in the Biology department.
- ☒ Find names of instructors with salary greater than that of all instructor in the Biology department.
- ☐ Find names of instructors with salary greater than that of at least two instructor in the Biology department.
- ☐ Find names of instructors with salary greater than that of at least two instructor

Question **24**

Complete

Mark 2.00 out of 2.00

Match the concepts to the correct category of data models:

entity, attributes and relationships

Conceptual

relations, tuples, rows, fields

Implementation

Record format, record orderings, access paths

Physical

Question **25**

Complete

Mark 1.00 out of 1.00

The structural constraint that specifies the maximum number of relationship instances that an entity can participate in is \_\_\_\_\_.

- ☐ Participation Constraint
- ☐ Existence Dependency
- ☒ Cardinality Ratio
- ☐ Identifying Relationship

Question **26**

Complete

Mark 2.00 out of 2.00

If we have two relations *employee* (*name, salary, deptno*) and *department* (*deptno, deptname, address*) then select the query that cannot be expressed using the basic relational algebra operations ( $\cup, -, \times, \pi, \sigma, \rho$ )?

- ☒ The sum of all employees' salaries
- ☐ Department address of every employee
- ☐ Employees whose name is the same as their department name
- ☐ All employees of a given department

Question **27**

Complete

Mark 0.00 out of 1.00

Given a set  $S$ , its powerset is denoted by  $P(S)$ . Assuming that  $D$  represents the domain of an attribute  $B$  of an entity type  $X$ , which of the following functions make sense?

- ☐  $B: X \rightarrow P(D)$
- ☐  $X: B \rightarrow P(D)$
- ☐  $X: P(D) \rightarrow B$
- ☒  $B: P(X) \rightarrow D$

Question **28**

Complete

Mark 1.00 out of 1.00

Creating specializations of employees based on Religion satisfies which of the following constraints? (Hindu, Muslim, Christian are the only options provided whereas some employees may have other than these three religion also)

- ☒ Partial
- ☐ Total
- ☐ Overlapping
- ☒ Disjoint

Question **29**

Complete

Mark 0.00 out of 1.00

Data isolation in the file system is the result of,

- ☐ Failure of the system
- ☐ Adding the condition based on the user requirements
- ☒ Concurrent access by multiple users
- ☐ Multiple files and formats

Question **30**

Complete

Mark 1.00 out of 1.00

Creating specializations of students based on those doing Academic Research and those doing Industry Internships satisfies which of the following constraints? (It is mandatory to engage in at least one of these (Both may also be considered) as part of the Summer Internship.)

- ☒ Total
- ☐ Disjoint
- ☐ Partial
- ☒ Overlapping

Question **31**

Complete

Mark 1.00 out of 1.00

The three-schema architecture was proposed to help achieve and visualize which of the following characteristics of the database approach?

- ☒ Multiple User View
- ☐ Multiuser Transaction Processing
- ☒ Data Abstraction
- ☒ Self-describing nature of a database
- ☐ Sharing of Data

Question **32**

Complete

Mark 1.00 out of 1.00

If Database Administrator modify the structure of the data record then this modification do not affect other application is called as \_\_\_\_\_.

- ☒ Data Independance
- ☐ Data Security
- ☐ Data Isolation
- ☐ Data Integrity

Question **33**

Complete

Mark 1.00 out of 1.00

A key defines a uniqueness constraint on the tuples in a relation. Which among the following types of keys violates this definition?

- ☐ Candidate key
- ☐ Primary key
- ☐ Super key
- ☒ Partial key

Question **34**

Complete

Mark 1.00 out of 1.00

Logical data independence provides transparency between which two layers of the Three-Schema Architecture?

- ☐ External and Internal
- ☐ Conceptual and Internal
- ☒ External and Conceptual

Question **35**

Complete

Mark 1.00 out of 1.00

A transaction is,

- ☐ a collection of operations that performs multiple logical function in a database application
- ☐ a single operations that performs multiple logical function in a database application
- ☐ a single operations that performs a single logical function in a database application
- ☒ a collection of operations that performs a single logical function in a database application

Question **36**

Complete

Mark 1.00 out of 1.00

Which one of the following refers to the copies of the same data (or information) occupying the memory space at multiple places.

- ☐ Data Inconsistency
- ☒ Data Redundancy
- ☐ Data Mining
- ☐ Data Repository

Question **37**

Complete

Mark 1.00 out of 1.00

Consider the following Query,

```
SELECT name, course_id FROM instructor, teaches WHERE instructor.ID= teaches.ID;
```

The above query can also be replaced with,

- ☐ Select course\_id from instructor join teaches;
- ☐ Select name,course\_id from teaches,instructor where instructor.id=course.id;
- ☐ Select name, course\_id from instructor;
- ☒ Select name, course\_id from instructor natural join teaches;

Question **38**

Complete

Mark 0.00 out of 2.00

Select the correct result of following logical expressions, (here Unknown means NULL)

I.) Unknown OR True

II.) True AND Unknown

III.) Unknown AND False

IV.) NOT Unknown

- ☒ (I.) True (II.) False (III.) False (IV.) Unknown
- ☐ (I.) True (II.) Unknown (III.) False (IV.) Unknown
- ☐ (I.) Unknown (II.) False (III.) False (IV.) Unknown
- ☐ (I.) Unknown (II.) Unknown (III.) False (IV.) False

Question **39**

Complete

Mark 1.00 out of 1.00



The following image is a symbol for \_\_\_\_\_.

- ☐ Relationship
- ☒ Attribute
- ☐ Weak Entity
- ☐ Entity

Question **40**

Complete

Mark 0.00 out of 1.00

The property that apps can operate on data by invoking methods through their signatures, irrespective of how the method has been implemented, is known as \_\_\_\_\_.

- ☐ Data model
- ☐ Program-operation independence
- ☐ Data abstraction
- ☒ Program-data independence

[◀ Quiz1 \(4 March 2022\)](#)[Mid Semester Online Part 2 \(8 March 2022\) ▶](#)