

MIDTERM EXAMINATION
FALL 2010
CS403- DATABASE MANAGEMENT SYSTEMS

Question No: 1 (M a r k s: 1)

Which of the following is not a benefit of normalization?

- ▶ Minimize insertion anomalies
- ▶ Minimize deletion anomalies
- ▶ Minimize updation anomalies
- ▶ **Maximize redundancy**

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Question No: 2 (M a r k s: 1)

Controlling redundancy in a database management system DOES NOT help to

- ▶ avoid duplication
- ▶ avoid unnecessary wastage of storage space
- ▶ **avoid unauthorized access to data**
- ▶ avoid inconsistency among data

Question No: 3 (M a r k s: 1)

In a conceptual database model, which of the following most likely represents a valid identifier for a class grades?

- ▶ StudentID
- ▶ StudentID, CourseID
- ▶ StudentID, CourseID, InstructorID
- ▶ **StudentID, CourseSectionID**

<http://www.vchowk.com>

Question No: 4 (M a r k s: 1)

Identify the operation which is NOT one of the parts of the five basic set operations in relational algebra?

- ▶ **Join**
- ▶ Union
- ▶ Cartesian Product
- ▶ Set Difference

Question No: 5 (M a r k s: 1)

Making a change to the conceptual schema of a database but not affecting the existing external schemas is an example of

- ▶ Physical data independence.
- ▶ Concurrency control.
- ▶ **Logical data independence.**
- ▶ Functional dependency

Question No: 6 (M a r k s: 1)

Select the correct statement among the following on proper naming of schema constructs:

- ▶ Entity type name applies to all the entities belonging to that entity type and therefore a plural name is selected for entity type.
- ▶ **In the narrative description of the database requirements, verbs tend to indicate the names of relationship types.**
- ▶ The nouns arising from a database requirement description can be considered as names of attributes.
- ▶ Additional nouns which are appearing in the narrative description of the database requirements represent the weak entity type names.

Question No: 7 (M a r k s: 1) <http://www.vchawk.com>

Identify the constraint that limits the values that can be placed in a column.

- ▶ Not null
- ▶ **Check**
- ▶ Foreign Key
- ▶ Unique

Question No: 8 (M a r k s: 1)

Identify the INCORRECT statement among the given.

- ▶ An entity may be an object with a physical existence like a car, a house or an Employee.
- ▶ **One cannot consider something which has conceptual existence like a course in a degree program as an entity.**
- ▶ Age can be considered as a single value attribute of a person.
- ▶ An entity type describes the schema or intension for a set of entities which share the same structure.

Question No: 9 (M a r k s: 1)

Select the correct statement among the following.

- ▶ **Role names are not technically necessary in relationship types when all the participating entity types are distinct.**
- ▶ When different entity types participate only once in a single relationship type it is called a recursive relationship.
- ▶ Cardinality ratios for binary relationship are displayed on Entity Relationship Diagrams by using a diamond shape notation
- ▶ Partial participation which is also called existence dependency is displayed as a double line connecting the participating entity type to the relationship

Question No: 10 (M a r k s: 1)

If W, X, Y and Z are attributes of a relation, which of the following inference rules for functional dependencies is correct?

- ▶ If $(X, Z) \rightarrow Y$ then $X \rightarrow Y$ and $Z \rightarrow Y$.
- ▶ **If $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow (Y, Z)$.**
- ▶ If XY then $Y \rightarrow X$
- ▶ If $X \rightarrow Y$ then $(X, Z) \rightarrow (Y, W)$.

Question No: 11 (M a r k s: 1) <http://www.vchawk.com>

Which of the following is not a benefit of normalization?

- ▶ Minimize insertion anomalies
- ▶ Minimize deletion anomalies
- ▶ Minimize updation anomalies
- ▶ **Maximize redundancy**

Question No: 12 (M a r k s: 1)

A candidate key that does not have a null value and is selected to uniquely identify all other attribute values in any given row is called a ____.

- ▶ superkey
- ▶ candidate key
- ▶ **primary key**
- ▶ secondary key

Question No: 13 (Marks: 1)

Incase of Context-level Diagram, the system is represented by Select correct option:

- ▶ One process atleast
- ▶ Two processes atleast
- ▶ **One process only**
- ▶ Any number of processes

Question No: 14 (Marks: 1) <http://www.vchowk.com>

A _____ is used to maintain a connection between the users of the database system.

Select correct option:

- ▶ Mail server
- ▶ **File Server**
- ▶ Client-server
- ▶ None of the given.

Question No: 15 Give types of relations (02 Marks)

Question No: 16 Briefly explain what is Partial Dependency (02 Marks)

Answer:

In database terminology, a partial functional dependency occurs when the value in a non-key attribute of a table is dependent on the value of some part of the table's primary key (but not all of it).

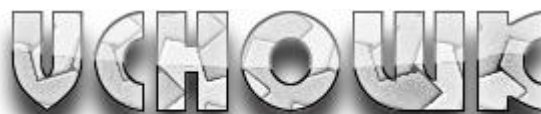
Question No: 17 Give at least 03 types of Anomalies which Normalization handles (03 Marks)

Answer:

- Redundancy
- Insertion Anomaly
- Deletion Anomaly
- Updation Anomaly

Question No: 18 What is Data Definition Language (DDL) ? (03 Marks)

Answer:



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hysical

The language is used to translate p
design to actual data object

Creat
Alter
Drop
Modify

Used for table and columns

Question No: 19 Briefly explain what is a primary key and give example. (05 Marks)

Answer:

The primary key uniquely identifies the entity instance in entity type.

The primary key uniquely identifies the record in table

Candidate key selected to uniquely identify the record in the table.

This is also called the successful candidate key.

Question No: 20 What are the benefits of using default values? (05 Marks)

Answer: <http://www.vchowk.com>

If we don't give value to a particular attribute it will automatically give a value to that attribute.

Default value constraint is used for efficiency purpose in data entry process.

For example at the time of admission at same class level all students have same age except some exceptions.