AR-104

May-2016

B.C.A., Sem.-II

CC-110 : Database Management System – I (DBMS-I)

Time : 3 Hours] **[Max. Marks : 70**

1. (a) (1) Explain Network Model. **8**

   (2) Explain Data Anomalies and Data Redundancy.

   OR

   (1) Explain Metadata. **8**

   (2) Differentiate between Data and Information with example.

   (b) Explain Database Function in detail. **6**

   OR

   Explain Types of DBMS in detail. **6**

2. (a) (1) Explain Integrity Rules. **8**

   (2) Explain types of relationship with example.

   OR

   (1) Explain Data Dictionary and System Catalogue. **8**

   (2) Define Table with its characteristics.

   (b) Explain Relational Set Operators with example. **6**

   OR

   Define Terms : Super Key, Foreign Key and Primary Key. **6**

3. (a) (1) Explain Connectivity and Cardinality with example. **8**

   (2) Explain Relationship Degree.

   OR

   (1) Explain Recursive Relationship and Derived attribute. **8**

   (2) Explain Entity, Attribute, Domain and Constraint.

(b) Draw an ER Diagram for the given case using Chen Notation. **6**

- Movies may be launched in one or more theaters.
- A theatre may have a single screen or a theatre may be a multiplex.
- At a particular instance, only one movie may be displayed on a screen.
- Though on a particular day, more than one movie may be displayed on a single screen.
- At a particular instance, more than one movie may be displayed in a multiplex.
- One movie consists of at least one actor.
- One actor may be working in multiple movies.
- A movie may be seen by multiple customers.
- A customer may also view multiple movies, not all movies at the same time.

OR

Draw an ER Diagram for the given case using Crow's Foot Notation.

- D-Mart is a departmental store having more than one department such as electronics, garments, cosmetics, toys etc.
- Each department is maintained by many sales persons under the inspection of department head.
- Customers visits this departmental store and purchase items from different departments.
- The payment of purchased items is received at the cash counter of the store.
- At the end of day each department head sends selling detail of related product to store manager.
- The storage manager maintains stock of products.

4. (a) (1) Explain Functional Dependency and different types of Dependency. **8**
    (2) Explain Denormalization.

    OR

    (1) Explain Normalization. What is the need of normalization ? **8**
    (2) Explain the characteristic of 1NF, 2NF and 3NF.

  (b) For the given data below, Draw Dependency Diagram and normalize the data till 3NF. **6**

Roll No	Name	Book ID	Book Name	Category ID	Category Name	Issue Date	Return Date

OR

For the given data below, Draw Dependency Diagram and normalize the data till 3NF. **6**

Order _No.	Order _Date	Vendor _No.	Vendor _Desc.	Product _No.	Product _Desc.	Product _Price	Order- Qty	Order _Price	Discount	Final _Price

5.   Answer the following : **14**

(1)   A recursive relationship is a relationship between an entity and

(a)   itself (b)   a subtype entity

(c)   an archetype entity (d)   an instance entity

(2)   _____ means Data about Data.

(a)   Recursion (b)   Metadata

(c)   Foreign Key (d)   Data Dictionary

(3)   Properties that describe the characteristics of entities are called:

(a)   entities (b)   attributes

(c)   identifiers (d)   relationships

(4)   Functional Dependencies are the types of constraints that are based on _____.

(a)   Key (b)   Key revisited

(c)   Superset key (d)   None of these

(5)   A _____ join links tables on the basis of Equality Condition.

(a)   inner (b)   outer

(c)   equi (d)   None of these

(6)   Unnecessary Duplication of data in one or more table is called _____.

(a)   Metadata (b)   Relationship

(c)   Join (d)   Redundancy

(7)   In a table each attribute has a specific range of value is called _____.

(a)   Join (b)   Domain

(c)   Primary Key (d)   Referential Integrity

(8)   The _____ define data as a raw material.

(a)   Data (b)   Information

(c)   Paragraph (d)   Table

(9)   Many-to-many relationship requite a third table is called _____.

(a)   Product Operator (b)   Bridge Entity

(c)   Weak Entity (d)   Candidate Key

(10) In Chen's notation multivalued attribute is indicated by _____.

    (a)   Dashed Line   (b)   Diamond

    (c)   Rectangle Box   (d)   Double Line

(11) FD stands for _____

    (a)   Fundamental Database

    (b)   Functional Database

    (c)   Functional Dependency

    (d)   None of these

(12) _____ has no partial Dependency.

    (a)   1 NF   (b)   2 NF

    (c)   3 NF   (d)   None of these

(13) Composite entity is also known as bridge entity. (True/False)

(14) Give the full form of RDBMS.

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