Seat No. : _____

AA-108

April-2019

B.C.A., Sem.-II

CC-110 : Database Management System-I
(Old Course)

Time : 2:30 Hours] **[Max. Marks : 70**

1. (A) (1) Give the difference between Data and Information with example. **7**

(2) Explain the Role and Advantage of DBMS. **7**

OR

(1) Write a short-note on the Network Model.

(2) Write a short-note on DBMS Functions.

(B) Answer the following : (Any **four**) **4**

(1) A _____ database runs on a personal computer.

(a) Single-user (b) Multi-user

(c) Distributed (d) None of these

(2) A collection of related records is known as file. (True/False)

(3) The relational model foundation is a mathematical concept known as relation. (True/False).

(4) DDL is stands for _____.

(5) Software refers to all of the system's physical devices. (True/False).

(6) Information is produced by processing data. (True/False)

2. (A) (1) Write a short-note on the Data Dictionary and The System Catalog. **7**

(2) What is Table ? Explain the characteristics of a Relational Table. **7**

OR

(1) Write a short-note on Integrity Rules.

(2) Explain the types of relationship with example.

(B) Answer the following. (Any **four**) **4**

(1) In RDBMS one row in a table is called as a _____.

(2) The _____ operators combine all rows from two tables, excluding duplicate rows.

(3) A table is also called as Relation. (True/False)

(4) A primary key cannot contain null entries. (True/False)

(5) A _____ provides the detail description of all the tables found within database.

(6) The foreign key allows null values. (True/False)

3. (A) (1) Develop an ERD for the following data using Crow's Foot notation. **7**

(a) Ravindra Motors is an automobile company with many employed staff members like Driver, Manager, Employee, Peon etc.

(b) A Company has many transport Vehicles.

(c) A Vehicle can be driven by many Drivers.

(d) Many Customer supplies goods for transportation.

(e) Manager records Route details.

(f) A Route details may include many Goods.

(2) Explain Relationship Strength in brief. **7**

OR

(1) Write a short-note on Relationship Participation.

(2) Develop an ERD for the following data using Crow's Foot notation.

(a) Movies may be launched in one or more Theaters.

(b) A Theater may have a single screen or may have Multiplex.

(c) One Movie consists of at least one Actor.

(d) One Actor may be working in multiple Movies.

(e) A Movie may be seen by multiple Customers.

(f) A Customer may also view multiple Movies.

(B) Answer the following. (Any **three**) **3**

(1) When two entities are associated in a relationship, it is called _____ relationship.

(2) An optional attribute is an attribute that must have a value. (True/False).

(3) A _____ attribute is an attribute whose value is calculated from other attributes.

(4) A recursive relationship is a relationship that exists between occurrences of the same entity set. (True/False).

(5) Associative entity is also known as composite entity. (True/False)

4. (A) (1) Explain partial dependency with example. **7**

(2) What is normalization ? Explain the need of normalization in detail. **7**

OR

(1) Define fully functional dependency. What are the three data anomalies ? Explain in brief.

(2) Discuss the process of conversion to 1NF

(B) Answer the following. (Any **three**) **3**

(1) Normalization remove redundancy to the database. (True/False).

(2) A dependency when a non-prime attribute depends on another non-prime attribute it is called _____

(3) _____ has no transitive dependency.

(a) 1NF (b) 2NF

(c) 3NF (d) 4NF

(4) There are no repeating groups in ____ normal from.

(5) A diagram that show all dependencies within a given table structure is called _____.

_____

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1. (A) (1) Write a short-note on types of Databases. **7**

(2) Give the difference between Data and Information. **7**

OR

(1) Explain the concept of Entity and Relationship in ER model.

(2) Write a short-note on Advantages and Disadvantages of DDBMS.

(B) Answer the following. (Any **four**) **4**

(1) _____ is the data about data.

(2) RDBMS is stands for _____.

(3) Each column in a relation represents an entity. (True/False)

(4) DDBMS stands for _____.

(5) The Distributed processing system uses a multi-site databases. (True/False)

(6) Hardware refers to all of the system's physical devices. (True/False).

2. (A) (1) Explain referential and entity integrity in brief. **7**

(2) Write a short-note on types of relationship within the Relational Database. **7**

OR

(1) What is Table ? Explain the characteristics of a Relational Table.

(2) Explain PRODUCT, UNION, and INTERCECT relational set operators in brief.

(B) Answer the following. (Any **four**) **4**

(1) Duplication of data in two or more tables is called as _____.

(2) A tuple represents a single entity occurrence within the entity set. (True/False)

(3) An alternate primary key is known as _____ key.

(4) Secondary key is a minimal of super key. (True/False).

(5) Functional dependency is a relationship that exists when one attribute uniquely determines another attribute. (True/False)

(6) The foreign key allows null values. (True/False)

3. (A) (1) Develop an ERD for the following data using Crow's Foot notation. **7**

(a) Muktajiven Vidhyamandir is a school with many teaching and non-teaching staff members.

(b) One Teacher can take multiple Subjects.

(c) Students have to learn many Subjects. Students can be learnt by many Teachers.

(d) One class has one or more Division.

(e) School is also having different Departments like Labs, Library, Admin Office etc.

(f) One Subject has one or more Books.

(2) Explain the Connectivity and Cardinality with example. **7**

OR

(1) Develop an ERD for the following data using Crow's Foot notation.

(a) A Company has many Departments.

(b) Each Department has one or more Employee.

(c) Each Customer can purchase one or more Products.

(d) Each Employee has one and only one Designation.

(e) Each Employee can handle one or more Suppliers.

(f) One Supplier can supply one or more Products.

(2) Write a short-note on Relationship Degree.

(B) Answer the following. (Any **three**) **3**

(1) _____ are known as characteristic of entities.

(2) A database entity represents a real world object. (True/False)

(3) A _____ is a set of possible values for a given attributes.

(4) An attribute that contain a single value is called a _____.

(5) A _____ is an entity that cannot be uniquely identified by its attributes alone.

(a) weak entity (b) strong entity

(c) existence entity (d) none of these

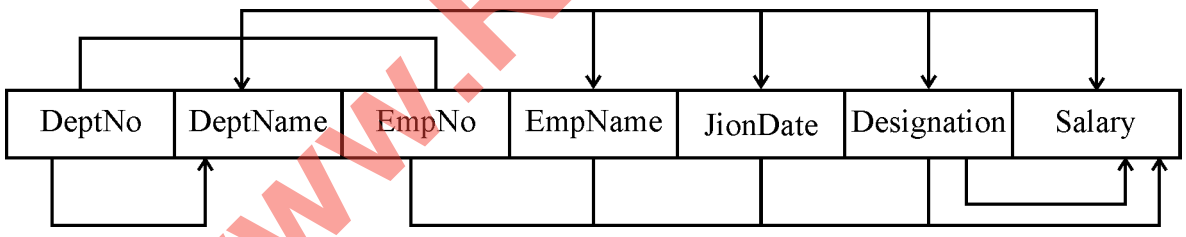
4. (A) (1) For the given data below, draw Dependency Diagram and Normalize the data till 3NF. **7**

RollNo	Name	BookID	BookName	CategoryID	CategoryName	IssueDate	ReturnDate

(2) Explain 2NF and steps of conversion of 1NF into 2NF with example. **7**

OR

(1) For the below dependency diagram answer the questions that follow:



(a) DeptNo ⟶ DeptName is _____ dependency.

(b) Designation ⟶ Salary is _____ dependency.

(c) DeptNo, EmpNo ⟶ DeptName, EmpName, JoinDate, Designation, Salary is _____ dependency.

(d) The table is in _____ normal form.

(e) Normalize the above table to the next normal from.

(2) Explain 3NF and steps of conversion of 2NF into 3NF with example.

(B) Answer the following. (Any **three**) **3**

(1) Normalization adds redundancy to the database. (True/False).

(2) _____ has no transitive dependency.

(a) 1NF (b) 2NF

(c) 3NF (d) 4NF

(3) _____ has no partial dependency.

(a) 1NF (b) 2NF

(c) 3NF (d) 4NF

(4) A diagram that show all dependencies within a given table structure is called _____.

(5) A dependency when a non-prime attribute depends on another non-prime attribute it is called _____.

_____