

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 form.

(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.

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- (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

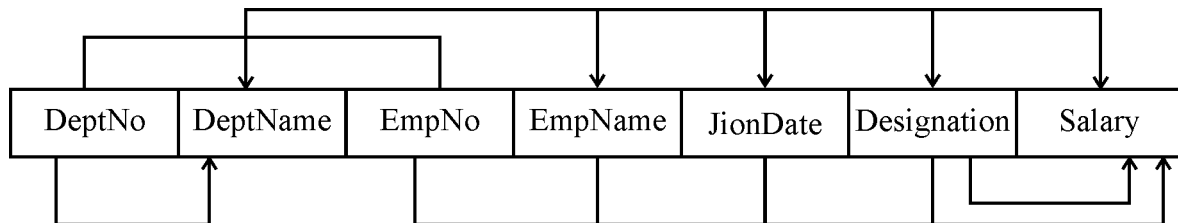
RollNo	Name	BookID	BookName	CategoryID	CategoryName	IssueDate	ReturnDate
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(2) Explain 2NF and steps of conversion of 1NF into 2NF with example.

7

OR

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



- (a) DeptNo \longrightarrow DeptName is _____ dependency.
 - (b) Designation \longrightarrow Salary is _____ dependency.
 - (c) DeptNo, EmpNo \longrightarrow DeptName, EmpName, JionDate, Designation, Salary is _____ dependency.
 - (d) The table is in _____ normal form.
 - (e) Normalize the above table to the next normal form.
- (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 _____.
