K17P 0236

Reg. No. : .....

Name : .....

First Semester M.C.A. Degree (Reg./Supple./Imp.) Examination, January 2017
(2014 Admn. Onwards)
MCA 1C05 : DATABASE MANAGEMENT SYSTEMS

Time : 3 Hours Max. Marks : 80

Instructions *:1) Answer* ***any ten*** *questions from Section – A.* ***Each*** *question carries* ***three*** *marks.*
2) Answer ***all*** *questions from Section – B.* ***Each*** *question carries* ***ten*** *marks.*

SECTION – A

Note : Answer **any ten** questions. **Each** question carries **three** marks.

1. What is the difference between physical data independence and logical data independence ?
2. What is a data dictionary ?
3. What are the disadvantages of file processing system ?
4. Define the term generalisation of relational model.
5. What is an entity relationship model ?
6. Define single valued and multi-valued attributes.
7. What is normalization ? What is its purpose ?
8. Explain Trivial and non-trivial dependencies.
9. Write a note on relational calculus.

P.T.O.

10. Differentiate between natural join and outer join.

11. Differentiate between primary key and foreign key.

12. What is the purpose of "NULL" ? Is a component of a primary key allowed to accept "null" ? Why ?

SECTION – B

Note : Answer **all** questions. **Each** question carries **10** marks.

13. a) Write a neat diagram, explain the structure of a DBMS.

OR

b) Explain about various data models.

14. a) Draw an ER diagram for the situation given below :

Library consists of many books in different subject areas where books are written by different authors and are published by different publishers. A book is published by only one publisher. There are in-side members and out-side members who gets books issued for their use. The issuing and return operation of the books are managed by the librarian.

OR

b) Discuss the conventions for displaying an ER schema as an ER diagram.

15. a) Why is BCNF is more desirable normal form than any of the lower order normal forms ? Give an example of a relational schema that in 3NF but not in BCNF.

OR

b) With the help of an example relations and dependency diagram, explain the concept of functional dependency.

16. a) Write on the various algebraic operations that can be performed to manipulate the data in the database.

OR

b) What is a join in DBMS ? Explain three types of join with the help of an example for each.

17. a) Define a data manipulation language. Write the syntax for the following and give an example for each :

i) Select statement

ii) Update statement

iii) Delete statement

iv) Insert statement.

OR

b) Consider the following schema :

Employee (E_No, E_Name, address, city, basic_sal, job_status)

Projects (P_No, P_Name, P_Category)

Work-In (P_No, E_No, P_duration)

Write appropriate SQL queries for the following :

i) Display the names of employees who are working in a project on "DBMS".

ii) Find the employee number of all employees who are working on at-least one project.

iii) Find the average salary of all employees working in a project "based in Delhi".