



K18P 1396

Reg. No. :

Name :

First Semester M.C.A. Degree (Reg./Supple./Imp.)
Examination, December 2018
(2014 Admn. Onwards)
MCA 1C05 : DATABASE MANAGEMENT SYSTEMS

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. Differentiate database systems and file systems.
2. What is DDL ? Give an example.
3. Compare and contrast database users and administrators.
4. Differentiate between primary key, candidate key and super key in ER model.
5. What are the functions of relational model ?
6. List out the features of entity relationship.
7. Define normalization.
8. What are the functional dependencies in database ?
9. Differentiate between natural join and outer join.
10. Discuss the operations of SELECT and PROJECT in relational algebra.
11. Give the syntax and meaning of the following SQL functions :
IN and INITCAP.
12. Given the following relations :
EMP (Name, Eno, Deptno, Salary) and DEPT (Deptno, Dname, Location).
Write a query in SQL to find the name of the employee of each department
who is getting highest salary. (10×3=30)

SECTION – B

Answer **all** questions. **Each** question carries **ten** marks.

13. a) With a neat diagram, explain the DBMS component modules in detail. 10
- OR
- b) i) List and explain the advantages of DBMS. 5
- ii) Discuss the data base access methods, briefly. 5

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14. a) Discuss the conventions for displaying the ER schema as an ER diagram briefly. 10
OR
- b) List and explain any two data base applications briefly. 10
15. a) Let $R = (A, B, C, D, E, F)$ be a relation scheme with the following dependencies :
 $C \rightarrow F, E \rightarrow A, EC \rightarrow D, A \rightarrow B$. Determine, if EC is a key for R. 10
OR
- b) With a suitable example, explain the types of normalization in data base design. 10
16. a) Define the five basic operators of relational algebra with suitable example for each. 10
OR
- b) Write a note on calculus and explain operations of each briefly. 10
17. a) What are views ? Explain how views are different from tables. 10
OR
- b) Write SQL queries for the given database (Assume any values for required attributes).
Sailor (sid, sname, rating, age), Boat (bid, bname, color) and Reserves (sid, bid, date)
- Find the names of sailors who have reserved 'red' boat.
 - Find the sailor (name) with highest rating.
 - Find the average age of sailor.
 - Find the age of youngest sailor for each rating level.
 - Add the new boat to database.
- (5×2=10)