

Roll No.

Total Pages : 3

BCAM-15 19016

DATABASE MANAGEMENT SYSTEM

Paper-BCA-204

Time Allowed : 3 Hours] [Maximum Marks : 80

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Write a note on Database schema, Sub-schema and Database instance.
- (b) Differentiate between Primary key and Unique key.
- (c) Cardinality ratios.
- (d) Order by and Group by clause in SQL. $4 \times 4 = 16$

UNIT-I

2. Explain the difference between the three layers of ANSI-SPARC three-tier architecture. How are these schema layers related to the concept of Data independence? 16
3. Differentiate between Traditional file system and Database management system. Explain the advantages and disadvantages of Database management system over Traditional file system. 16

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UNIT-II

4. (a) What do you mean by Attributes? Discuss the different type of attributes. 8
- (b) What do you understand by Relationship? Explain relationship constraints. 8
5. (a) Differentiate between Records based data models and Object based data models. 8
- (b) Write a note on Client Server Architecture of DBMS. 8

UNIT-III

6. What do you mean by Relational Algebra? Discuss the different operations performed in relational algebra with suitable example. 16
7. (a) What are the different constraints used in Relational model? Explain. 8
- (b) Explain the twelve rule as proposed by Dr. Codd for Relational model. 8

UNIT-IV

8. What are the main characteristics of Functional dependencies? State the similarities and dissimilarities among BCNF and 3NF. Why BCNF is considered to be stronger from 3NF? Provide an example to illustrate. 16

9. Explain the following SQL statements with their syntax and illustration.

- (a) Alter and Update statement
- (b) Delete, Drop and Truncate statement
- (c) Insert statement.