

**July 2021**  
**Bachelor of Computer Applications (BCA) Examination**  
**Fourth Semester**  
**BCA-403 : DATABASE MANAGEMENT SYSTEM**

[Max. Marks 50]

[Min. Marks 17]

**Special Note : Word limit for answer of each question is 250 to 300 words.**

**Note : Attempt any two sub-parts of a question. All questions carry equal marks.**

1. (a) What is a data model ? Compare hierarchical, network and relational data model giving example.  
(b) How is DDL different from DML ? Write the syntax of any two sample queries of DDL and two sample queries of DML.  
(c) List the advantages, disadvantages and applications of DBMS.
2. (a) What is an E-R model ? Draw E-R model for college management system.  
(b) Explain different types of relationships and their representations in E-R model.  
(c) Differentiate between :  
(i) Strong and Weak Entities  
(ii) Generalization and Specialization.
3. (a) Describe the concept of keys in DBMS. Explain different key with their use.  
(b) Discuss different types of aggregate functions in SQL.  
(c) Explain different types of 'JOINS' and their relevant outputs.
4. (a) Explain Looping and Decision Making in PL/SQL. Write suitable program to explain.  
(b) How is trigger different from stored procedure ? Explain types of triggers.  
(c) Describe Codd's rules and its need.
5. (a) Define functional dependency giving example. How are primary keys related to functional dependencies ?  
(b) Compare and contrast BCNF with 3NF.  
(c) Illustrate multivalued dependencies and fourth normal form with example.

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