BCA-09/DCA-103

June - Examination 2026

BCA (Part-II) Examination

Database Management System

Paper : BCA-09/DCA-103

[*Time: **3** Hours*] [*Maximum Marks: **70***]

Note :- The question paper is divided into three Sections A, B and C. Write answers as per the given instructions in each section.

Section-A **7×2=14**

(Very Short Answer Type Questions)

Note :- Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries **2** marks.

1. (i) What is a Database Schema?
   (ii) Define Integrity Constraints.
   (iii) What is a Hierarchical Database Model?
   (iv) What is Weak Entity Set?
   (v) What is the Degree of a Relation?
   (vi) What is an RDBMS?
   (vii) What is Functional Dependency?

Section-B **4×7=28**

(Short Answer Type Questions)

Note :- Answer **any four** questions. You have to delimit your each answer maximum up to **200** words. Each question carries **7** marks.

2. What is the difference between Data, Field, Record and Table? Give an example of each.
3. Compare DBMS with conventional file processing system.
4. What is the Relational Data Model? Explain its main features. Why is it preferred over the Hierarchical and Network models?
5. What are the Mapping Cardinalities? Explain the four types of cardinality. Also explain total participation and partial participation constraints in an ER diagram.
6. What is the difference between a Super Key, a Candidate Key and a Primary Key? Explain with examples.

7. What are the Armstrong's Axioms? How are they used to find the closure of a set of functional dependencies?

8. What is SQL? Explain main SQL commands of DDL and DML with one example of each.

9. How are the WHERE, GROUP BY and HAVING clauses used in an SQL query? Explain each with an example.

Section-C **2×14=28**

(Long Answer Type Questions)

Note :- Answer **any two** questions. You have to delimit your each answer maximum up to **500** words. Each question carries **14** marks.

10. Explain the three types of record-based database models.

11. What is Normalization? Using an example, show conversion to 1NF, 2NF, 3NF and BCNF.

12. What are the different types of database failures? Explain different recovery mechanisms in DBMS to control these failures.

13. What is Concurrency Control? Explain Lost Update Problem, Uncommitted Dependency Problem and 2PL.
