

(UG335)

Roll No.

S.C.No.—2214302

B.C.A. EXAMINATION, Dec. 2024

(Third Semester)

(Batch 2022-23)

(Main)

DATABASE MANAGEMENT SYSTEM

22BCA302

Time : 3 Hours

Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. Explain the following : **2×8=16**

- (a) Database Management System
- (b) DBMS user and DBMS administrator
- (c) Schema

- (d) DDL and DML
- (e) ER diagram
- (f) Integrity Constraints
- (g) Views
- (h) Query Optimisation

Unit I

2. Explain traditional file system in detail. What are the advantages and disadvantages of Database Management System over Traditional file system based approach ? 16
3. (a) What are the different types of Database end users ? Discuss the main activities of each. 8
- (b) Discuss the components of DBMS in detail. 8

Unit II

4. What do you mean by Database System Architecture ? Explain three levels architecture of DBMS with the help of a diagram. 16
5. Differentiate the following : $4 \times 4 = 16$
- (i) Physical and Logical Data Independence
 - (ii) Centralised and Client Server Architecture
 - (iii) Homogeneous DBMS and Heterogeneous DBMS
 - (iv) Object Data model and Physical Data models.

Unit III

6. (a) What is a relationship type ? Explain the differences among a relationship type, relationship instance and relationship set with example. 10

(b) What are the naming conventions used for ER diagrams ? 6

7. Discuss the following :

- (i) Hierarchical and Network Data Models 8
- (ii) Relation Keys 4
- (iii) Constraints over Relations. 4

Unit IV

8. What are Normalisation ? Explain various forms of Normalisation with the help of examples. 16

9. Write short notes on the following : $8 \times 2 = 16$

- (i) Two Phase Locking and Timestamp method
- (ii) Data Recovery Techniques.