Roll No. ..... Total Pages : 3

BCA/D-14 **837**

COMPUTER SCIENCE

(Fundamentals of Database Systems)

Paper–BCA–235

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) Differentiate between Casual users and Naïve users. 4

   (b) State differences between Two-tier and Three-tier architecture of DBMS. 4

   (c) Write a short note on Entity type. 4

   (d) What do you mean by Integrity? Discuss the Entity integrity and Referential integrity constraints. 4

UNIT–I

2. Explain various components of Database Management System. Also discuss various advantages and disadvantages of Database system. 16

3. (a) Discuss the following terms in the context of DBMS :

   (i) Data Aggregate

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(ii) Data Migration

(iii) Data Integrity

(iv) Data Dictionary. 2×4=8

(b) Who is DBA? What are the responsibilities of DBA? Discuss in detail. 8

UNIT–II

4. Explain the Architecture of DBMS in detail and mention, how it is related to levels of Data abstraction. Also discuss the advantages of three level architecture. 8

5. (a) Explain the concept of Mapping with help of diagram. Also discuss its types.

   (b) Differentiate between Logical and Physical Data Independence. 2×4=8

UNIT–III

6. What do you understand by Record-based and Object based logical data models. Explain Record-based data model in detail. 16

7. What is an ER-diagram? Discuss the steps for designing an ER-diagram. Draw an ER-diagram for a software company that handles projects. The company controls projects which have managed by the employees of company. An employee supervised other employees and work on a p[project for hourly basis. 16

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UNIT–IV

8. (a) Explain various relational constraints by giving suitable examples. 8

   (b) Explain the following keys :

   (i) Candidate key

   (ii) Foreign key

   (iii) Primary key

   (iv) Super key. 2×4=8

9. Explain Relational model. What operations are performed on Relational model? Also discuss the advantages and disadvantages of Relational Data model. 16