

**GSM/D-21**

**1200**

**FUNDAMENTALS OF DATA BASE SYSTEM**

**Paper-BCA-235**

Time : Three Hours]

[Maximum Marks : 80

**Note :** Q. No. 1 is compulsory. In addition to that attempt *four* more questions, selecting *one* question from each unit. All questions carry equal marks.

**Compulsory Question**

1. (a) Define Integrity.
- (b) Define Relational Algebra.
- (c) What are three levels of Database system?
- (d) Distinguish between Primary Key and Secondary key.
- (e) What are various types of data model?
- (f) What are duties of Database Designers?
- (g) What are properties of a Relation?
- (h) Define Data and Information. (16)

**UNIT-I**

2. Write short note on :
  - (i) Responsibilities of DBA. (8)
  - (ii) Characteristics of Database Approach. (8)
3. (a) What are disadvantages of DBMS? (8)
- (b) What are Components of a database system environment? Explain. (8)

## UNIT-II

4. (a) What do you mean by data independence? Explain various types of data independence. (8)  
(b) Explain the concept of Schema. (8)
5. (a) Explain the architecture of DBMS. What are its objectives? (8)  
(b) Write a short note on Client Server architecture of DBMS. (8)

## UNIT-III

6. (a) Explain E-R diagram and the notations used for drawing ER diagram. (8)  
(b) Explain Relationship types and Relationship instances. (8)
7. (a) Explain Record based data models and object based data models. (8)  
(b) Explain Entity, Entity set, attributes, super and candidate key. (8)

## UNIT-IV

8. Write a short note on :  
(i) Relational Algebra.  
(ii) Hierarchical and Network Data Model. (16)
9. (a) Explain various Integrity rules. (8)  
(b) Explain various update operations on relation and relational operators by giving suitable examples. (8)