INTRODUCTION TO DATABASE SYSTEM

Time Allowed : 3 Hours *Maximum Marks : 80*

Note : Attempt five questions in all, selecting ***one*** question from each unit in addition to compulsory **Question No. 1**. All questions carry equal marks.

Compulsory Question

1. (a) What do you mean by security ?
   (b) Define data aggregate.
   (c) Distinguish between entity and attribute.
   (d) Define domain of an attribute.
   (e) Distinguish between compoiste and atomic attributes.
   (f) What do you mean by storing entity type ?
   (g) Define recursive relationship.
   (h) Define view.

UNIT-I

2. (a) Define database. What are the characteristics of database ?
   (b) Explain integrated database environment by using example. What are tis disadvantages ?
3. (a) Explain various components of DBMS.
   (b) Explain the duties of database designers and application programmers.

UNIT-II

4. Describe three level architure of DBMS by using example. What are its advantages ?
5. (a) Explain object-based data models.

(b) What are the reasons for data independence ? Explain.

UNIT-III

6. Explain various steps in designing ER diagram. Design a ER diagram for the company database with the following descriptions :

   (a) The company is organized into departments. Each department has a unique name and a unique number. A department may have several locations.

   (b) A departmental controls a number of projects, each of which has a unique name, a unique number and a single location.

   (c) We store each employee's name, social security number, address and salary. An employee is assigned to one department but may work on several projects, which are not necessarily controlled by the same departments.

   (d) We want to keep track of the dependents of each employee for insurance purposes. We keep each dependent's name, age and relationship to the employee.

7. (a) Explain hierarchical data model and its operations.

   (b) Explain various types of relationship constraints.

UNIT-IV

8. Distinguish between the following :

   (a) Primary and secondary key

   (b) Degree and cardinality

(c) Domain and tuple uniqueness constraints

(d) Extension and intension.

9. (a) Explain relational data model.

(b) Explain integrity rule 1 and integrity rule 2 by using example.