

Roll No.

(05/25)

14385

B. A./B. Sc. EXAMINATION

(For Batch 2021 & Onwards)

(Fourth Semester)

DATABASE MANAGEMENT SYSTEMS

CS-41

Time : Three Hours Maximum Marks : $\begin{cases} \text{B. Sc. : 40} \\ \text{B. A. : 20} \end{cases}$

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

1. (i) What are data, information and records ?
How are they different to each other with example ?

- (ii) What are the limitations of file-based approach ?
- (iii) What are entity types and its attributes ?
- (iv) What is domain and range ? Explain with example.
- (v) What is a key constraint ?
- (vi) What is instance of the database system ?
- (vii) What are various views of data ?
- (viii) What is logical data independence ?

Unit I

- 2. (a) How is database approach better than file processing ? Explain with examples.
- (b) Explain the different levels of database end users.
- 3. (a) What is DBMS ? Explain its components with a neat and clean diagram.
- (b) What are the responsibilities of database administrator and designer ?

Unit II

4. What do mean by Schema, Instances and state of database and data independence (Logical and Physical data independence) ? Explain Three-Level-Schema (ANSI SPARC) Architecture with its mapping.
5. Why is ER model better than hierarchal and network model ? Draw ER model of a Banking System and explain all its entities, attributes, relationships, keys etc.

Unit III

6. What do mean by relational algebra ? Explain difference and division operation with example.
7. Write short notes on the following and explain with example :
 - (a) Domain Constraint
 - (b) Alternate key
 - (c) Referential Integrity constraints.

Unit IV

8. What is normalization and denormalization in database ? How is BCNF stricter than 3NF ? Explain with example.
9. Write short notes on the following :
- (a) Full Functional Dependency
 - (b) Update anomalies
 - (c) Candidate key.