

ID—180-CU-304031

B.C.A. EXAMINATION, 2023

(Third Semester)

INTRODUCTION TO DATABASE SYSTEM

Code : BCA-203

Time : 3 Hours

Maximum Marks : 80

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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

1. Write about the following (any *eight*) :

- (a) Record
- (b) File based approach
- (c) Schema
- (d) Cardinality Ratio
- (e) Abstraction
- (f) Candidate Key
- (g) Domain Constraint
- (h) Projection operation
- (i) Relational Algebra.

Unit I

2. (a) What are the advantages and disadvantages of database system ?
(b) Explain the various components of DBMS environment.
3. (a) What are the various responsibilities of DBA ?

- (b) What do you mean by Mapping in database system ? Explain External/ Conceptual mapping and Conceptual/Internal mapping.

Unit II

4. (a) Explain the architecture of DBMS. How is it related to three levels of data abstraction.
- (b) What do you mean by Data Model ? What are its types ? Explain.
5. (a) What is the difference between logical and physical data independence ?
- (b) Define balanced tree and binary tree.

Unit III

6. (a) Explain E-R Model using suitable example.

- (b) Define the following :
- (i) Entity set
 - (ii) Complex Attribute
 - (iii) Domain of Attribute
 - (iv) Key Attribute.

7. (a) Explain various relational constraints by giving suitable examples.
- (b) What do you mean by Integrity ? Define the entity integrity and referential integrity constraints.

Unit IV

8. (a) Explain various Relational oriented operations by using examples.
- (b) Define tuple-oriented Relational Calculus by giving suitable examples.

9. (a) Define functional dependency and Transitive dependency.
- (b) What do you mean by SQL? What are its types?

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