

Roll No. 22311270007
Hari

Exam Code : M-24

Subject Code—61417

B.Sc. EXAMINATION

(Main/Reappear)

(Batch 2019 Onwards)

(Fourth Semester)

COMPUTER APPLICATIONS

CCaL-404

Database Management System

Time : 3 Hours

Maximum Marks : 80

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

1. (a) What do you mean by Data Model ? 2
- (b) Compare File System approach and DBMS approach. 2

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- (c) What is cardinality ratio ? What are different types of cardinality ratios ? 2
- ✓(d) What is degree of a relationship ? 2
- ✓(e) What is the difference between relation instance and relation schema ? 2
- (f) What is selection operation in relational algebra ? 2
- (g) What is Functional Dependency ? 2
- ✓(h) Define the terms DDL and DML with suitable examples. 2

Unit I

- 2. ✓(a) What are the characteristics of database ?
What are the advantages and disadvantages of database system ? 8
- ✓(b) What is data independence ? Explain various types of data independence. 8

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3. (a) What is Data Abstraction in DBMS ?
What are the different levels of abstraction for DBMS ? 8
- (b) What is the difference between schema and instance in DBMS ? What are the different types of schema in DBMS ? 8

✓ Unit II

4. ✓(a) What is an Entity Relationship model in DBMS ? What are the advantages and disadvantages of ER model in DBMS ? 8
- ✓(b) What is an Entity ? Explain the various notations used to draw E-R diagram. 8
5. (a) What is attributes ? Describe the types of attributes by giving suitable examples. 8
- (b) Describe the various relationship constraints in DBMS. 8

Unit III

6. What is relational algebra ? Differentiate between select and project operation used in relational algebra. 16
7. Discuss various relational constraints using suitable examples. 16

Unit IV

8. (a) Explain the various rules for mapping ER model to relational database. 8
(b) What are Set operators in SQL ? Explain different types of set operations using suitable examples. 8
9. What do you mean by Normalization ? What are the desirable properties of decomposition during the process of normalization ? Discuss it various normal forms. 16