

Total number of printed pages-4

63 (FY)SEM-3/MAJ/BCAMAJ2024

2024

COMPUTER APPLICATION

Paper : BCAMAJ2024

(Database Management System)

Full Marks : 50

Pass Marks : 20

Time : Two hours

**The figures in the margin indicate
full marks for the questions.**

1. Multiple choice-type questions : 1×5=5

(a) The degree in a DBMS relation is the

(i) Number of attributes

(ii) Number of entities

(iii) Number of data

(iv) Number of tuples

(b) In which of the following the ALTER statement is included ?

(i) DQL

(ii) DML

(iii) DDL

(iv) DCL

(c) How many level of constraints are there in DBMS SQL ?

(i) 1

(ii) 2

(iii) 3

(iv) 4

(d) A super key is the _____ of a Candidate key.

(i) Subset

(ii) Superset

(iii) Key

(iv) Relation

(e) Which normalization form is based on the functional dependency ?

(i) 1NF

(ii) 2NF

(iii) 3NF

(iv) 4NF

2. Very short answer-type questions : **(any five)**
2×5=10

(a) What is a database schema ?

(b) What do you mean by *Catalog* in database approach ?

(c) What are the naming conventions of E-R Model ?

(d) What are relationship sets ?

(e) How foreign keys are defined ?

(f) What are CHECK and NOT NULL constraints in DBMS ?

(g) Explain the SQL datatype to store fractional values.

3. Short answer-type questions : **(any five)**
5×5=25

(a) What are the different data models of DBMS ? Explain in brief.

(b) Discuss Two-Tier Client/Server Architecture of DBMS.

(c) Explain the syntax to create a database relation with an example.

(d) What are logical and physical data independence ?

- (e) Discuss the concepts of a primary key and candidate key with an example.
- (f) State the informal design guidelines for relational schema.
- (g) Discuss *any two* aggregate functions of SQL.
- (h) Explain three schema architecture of DBMS.
- (i) What do you mean by updating a database ? Explain.
4. Descriptive/Analytical : **(any one)** $10 \times 1 = 10$
- (a) What is E-R model ? Discuss with an example diagram.
- (b) Explain the various properties of transactions.