

**2024/TDC (CBCS)/EVEN/SEM/
BVOCGEC-402T/401**

TDC (CBCS) Even Semester Exam., 2024

**Bachelor of Vocational Course
(Information Technology)**

(4th Semester)

Course No. : BVOCGEC-402T

(Database Management System)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

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

UNIT—I

1. (a) What is database model? Describe the different data models. 1+6=7
- (b) Explain client-server database technology. 7

OR

2. (a) What do you mean by RDBMS? 2
- (b) Discuss the advantages of DBMS. 4

(2)

- (c) Explain the following terminologies with examples : $2 \times 4 = 8$
- (i) Table
 - (ii) Tuple
 - (iii) Attribute
 - (iv) Domain

UNIT—II

3. Write short notes on the following relational algebraic operations used in database systems : $2 \times 7 = 14$
- (a) SELECT
 - (b) PROJECT
 - (c) RENAME
 - (d) UNION
 - (e) INTERSECTION
 - (f) EQUI JOIN
 - (g) THETA JOIN

OR

4. What is relational calculus? Explain the different forms of relational calculus. $2 + 12 = 14$

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(Continued)

(3)

UNIT—III

5. (a) What is meant by the closure of a set of attributes? Explain with example. 6
- (b) Explain the main phases of database design with diagram. 8

OR

6. (a) What is *E-R* diagram? What are the naming conventions and design issues? $2 + 3 = 5$
- (b) Explain the three main components of *E-R* diagram. 9

UNIT—IV

7. What is normalization? Explain 1NF, 2NF, 3NF and BCNF with examples. $2 + 12 = 14$

OR

8. What is functional dependency? How many types of functional dependency are there? Explain the different types of functional dependency. $2 + 2 + 10 = 14$

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(Turn Over)

UNIT--V

9. (a) What is constraint? Explain the different types of constraints in database system. 1+9=10

(b) Write the commands for the following : 1×4=4

- (i) To modify the structure of a table
- (ii) Dropping a table
- (iii) Renaming a table
- (iv) Updating a table

OR

10. (a) Write the syntax and explain the following statements : 2×3=6

- (i) GROUP BY
- (ii) ORDER BY
- (iii) HAVING

(b) Write the steps for joining multiple tables using SQL commands with example. 8
