

**2024/TDC (CBCS)/EVEN/SEM/
CACCC-403T/126**

TDC (CBCS) Even Semester Exam., 2024

COMPUTER APPLICATION

(4th Semester)

Course No. : CACCC-403T

(Introduction to Database System)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

UNIT—I

1. Answer any two of the following questions :

2×2=4

- (a) What do you mean by schema and instances?
- (b) What is data independence?
- (c) What do you mean by composite attribute and multivalued attribute?

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(Turn Over)



(2)

2. Answer any *one* of the following questions : 6

- (a) Explain the characteristics of database approaches.
- (b) Draw E-R diagram of library management system.

UNIT—II

3. Answer any *two* of the following questions :

2×2=4

- (a) Define aggregate function in SQL.
- (b) What is view? How is it defined in SQL?
- (c) Define join operation in relational algebra.

4. Answer any *one* of the following questions : 6

- (a) Explain different relational algebra operations.
- (b) Write the difference between—
 - (i) Drop command and Truncate command;
 - (ii) WHERE clause and HAVING clause.

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(Continued)

(3)

UNIT—III

5. Answer any *two* of the following questions :

2×2=4

- (a) Explain second normal form.
- (b) Define BCNF.
- (c) What is trivial functional dependency?

6. Answer any *one* of the following questions : 6

- (a) What are Armstrong's axioms in functional dependency?
- (b) Explain lossless decomposition with example.

UNIT—IV

7. Answer any *two* of the following questions :

2×2=4

- (a) What is deadlock?
- (b) Write the benefits of concurrency control.
- (c) Define isolation with example.

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(4)

8. Answer any *one* of the following questions : 6

- (a) Explain the properties of ACID in DBMS.
- (b) Describe the two-phase locking protocol and its role in concurrency control.

UNIT—V

9. Answer any *two* of the following questions :
2×2=4

- (a) What is file organization?
- (b) Define B-tree.
- (c) Write the distinction between primary index and secondary index.

10. Answer any *one* of the following questions : 6

- (a) Explain the different operations performed in a file.
- (b) Describe the process of insertion and deletion in B⁺ tree.

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