

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All question are compulsory.
 2. Figures to the right indicate full marks.
- Q.1 Attempt **any three** of the following: 15
- a. Write a short note on Codd's rules.
 - b. Explain DML and DDL.
 - c. Write short note on Generalization.
 - d. List various symbols used to draw ER diagram.
 - e. Explain weak entity set.
 - f. Define database system and explain the purpose of database system in detail.
- Q.2 Attempt **any three** of the following: 15
- a. Write Features of good relational database design.
 - b. Explain the concept of Relational Algebra.
 - c. Define Tuple Relational Calculus with example.
 - d. What is Normalization? Explain 1NF.
 - e. Define Joins and its types.
 - f. Define the following terms.
 1. Primary Key
 2. Candidate Key
- Q.3 Attempt **any three** of the following: 15
- a. Explain referential integrity constraints with example.
 - b. Explain Security mechanism in database.
 - c. Write short note on : a. Assertion b. Trigger
 - d. What do you mean by authorization and authentication in DBMS?
 - e. Write various aggregate functions available in SQL.
 - f. Explain the use of NULL value with example.
- Q.4 Attempt **any three** of the following: 15
- a. Describe ACID properties of transaction.
 - b. What is Deadlock? Explain Deadlock detection.
 - c. Explain the need of concurrency control in transaction management.
 - d. Explain Timestamp based protocol.
 - e. Explain view and conflict serializability with suitable example.
 - f. Explain the transaction in DBMS.
- Q.5 Attempt **any three** of the following: 15
- a. Explain PL/SQL block structure.
 - b. Explain Explicit Cursors with example.
 - c. Explain Exception Handling in PL/SQL with example.
 - d. Write a PL/SQL program to demonstrate the use of basic arithmetic operators on the numbers entered by user.
 - e. Differentiate Procedures and Functions.
 - f. Explain the Cursor for Loop with example.