

Q.P. Code : 540201

(OLD COURSE)

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question no. 1 is **compulsory**.
 (2) Answer any **four** from the remaining questions.
 (3) **All** questions carry **equal** marks.

1. (a) Differentiate file system and Database System. 10
 (b) Describe the overall architecture of DBMS. 10
2. (a) What is Data model? Explain various types of Data models. 10
 (b) Draw ER Model of Bank Enterprises. 10
3. (a) Define Normalisation? What is the importance of Normalisation in database design? Explain 1NF, 3NF and BCNF with example. 10
 (b) Explain following Relational operators with example. 10
 JOIN, SELECT, PROJECT, DIVISION and CARTESIAN PRODUCT.
4. (a) EMP(eid: integer, ename: string, age: integer, salary:real) 10
 WORKS (eid: integer, did: integer, petime: integer)
 I. Write SQL statement to create WORKS relation.
 II. Add Ram as an employee with eid = 101, age = 32 and salary = Rs 750000.
 III. Give every employee 10% rise.
 IV. Find total no of employees working in the department = "Computer".
 V. Arrange employees in descending order of their salary.
 (b) Explain Timestamp ordering protocol. 10
5. (a) What is transaction? Discuss state transition diagram and property of transaction. 10
 (b) Define Serializability. Explain Conflict and view Serializability. 10
6. (a) What do you understand by deadlocks in database system? Explain how it is prevented. 10
 (b) Explain in detail log-based Recovery. 10

TURN OVER

Q.P. Code : 540201

2

7. Write short notes on: **any four**
- I. Integrity Constraints in RDBMS
 - II. Triggers
 - III. Authorisation in SQL
 - IV. Primary and Foreign Key
 - V. Functional Dependency.

29