Roll No. ☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(CSE) (2011 Onwards) (Sem.–5)
RELATIONAL DATABASE MANAGEMENT SYSTEM–I
Subject Code : BTCS-502
Paper ID : [A2098]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Answer briefly :

1. What is encryption? What is its importance?

2. What is discretionary access control?

3. What are functional dependencies?

4. What is query optimization?

5. What is a view?

6. What are weak entities? Explain.

7. What is the need of normalization?

8. What is role based security?

9. What do you mean by serializability?

10. What is inconsistent read problem?

SECTION-B

11. Explain with the help of examples ACID properties in DBMS.

12. Explain two phase locking protocols. Explain with example.

13. Consider the following relations :

Hotel {hotelNo, name, address}

Room {roomNo, hotelNo, type, price}

Booking {hotelNo, guestNo, dateFrom, dateTo, roomNo}

Guest {guestNo, name, address}

Write the SQL statements for the following :

a) List the names and addresses of all guests in Chandigarh, alphabetically ordered by name.

b) List all family rooms with a price below Rs. 400 per night, in ascending order of price.

c) How many hotels are there?

14. What are the primary and foreign keys? Explain with example.

15. What is database modeling? How is E-R model different from other data models? What are the main advantages of the E-R model?

SECTION-C

16. Discuss the following with examples :

a) Lost update problem.

b) Dirty reads.

c) Incorrect analysis problem.

17. Explain the deferred and immediate modification versions of log based recovery scheme in terms of ease of implementation and overhead cost.

18. Explain various types of normalization with examples. Distinguish between 3NF and BCNF.