15094

M.Sc. DEGREE EXAMINATION, OCTOBER/NOVEMBER 2015.

FIRST SEMESTER

Computer Science

Paper IV – ADVANCED DATABASE MANAGEMENT SYSTEM

Time : Three hours Maximum : 75 marks

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page.

1. Functions of DBA.

2. What is catastrophic failure?

3. Differentiate 'key' and 'super key'.

4. What is logical data independence?

5. Define shared lock.

6. Differentiate binary and shared locks.

7. What is mean by revoking a privilege?

8. What are the naming conventions used for ER schema diagrams?

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. Discuss the conventions for displaying an ER schema as an ER diagram.

Or

10. Discuss the main categories of data models.

11. Discuss time stamp protocol for concurrency control. How does strict time stamp ordering differ from basic time stamp ordering?

Or

12. What is the two-phase locking protocol? How does it guarantee serializability?

13. What is the difference between persistent and transient objects? How persistence is handled in typical OO database systems?

Or

14. Describe the built-in structured literals of the ODMG Object Model and the operations of each.

15. (a) Discuss the types of privileges at the account level and those at the relational level.

(b) How do spatial databases differ from regular databases?

Or

16. What are the main software modules of a DDBMS? Discuss the main functions.