

- (b) What are the challenges of temporal databases ?
Discuss different types of temporal database systems. **8+7=15**

9. Write notes on the following : **8+7=15**
- (a) Geographical information systems
 - (b) Object-based databases.

Roll No.

Total Pages : 04

MCA/M-24

24520

ADVANCED DATA BASE SYSTEMS

Paper : MCA-20-23

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting *one* question from each Unit-I to Unit-IV. Q. No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) What are the different type of users in DBMS ?
- (b) Write a note on type inheritance in EER model.
- (c) How do you establish primary-foreign key relationship using SQL statement ?
- (d) Write note on PL/SQL transactions.
- (e) Write any two heuristic rules for query optimization.
- (f) What is time stamping ?
- (g) Distinguish between different types of DDBMS.
- (h) Write note on XML schema. **15**

Unit I

2. (a) Define database schema, sub-schema and database instances. Discuss three tier architecture of DBMS.
(b) Define database languages and sub-languages. Explain database interfaces. **8+7=15**
3. (a) Outline symbolic notation of ER diagram. Explain relationship in ER diagram.
(b) Draw a sketch of occurrence level diagram of EER model. Discuss the concept of generalization and specialization. **8+7=15**

Unit II

4. (a) How do you implement group by and order by clause in SQL ? Write need, syntax and example of Update and Delete SQL statements. How do you write ?
(b) Write about declare section of PL/SQL block. How do you implement cursors in PL/SQL ? Discuss. **8+7=15**

5. (a) What are the properties of normalization ? Discuss the normal form based on multivalued and join dependency. Give example in support of your answer.
(b) Distinguish between different types of functional dependencies. **8+7=15**

Unit III

6. (a) Why do we need scanning, parsing and validation in query processing ? Discuss query tree and show equivalence of query tree with example.
(b) Write about transactions and schedule. Discuss different types of schedules. **8+7=15**
7. (a) Discuss the role of two-phase locking protocols in managing issues related to concurrency.
(b) Why do we need database recovery ? Explain recovery mechanism. **8+7=15**

Unit IV

8. (a) What is parallel processing and parallel databases ? Draw and explain shared disk multiple CPU architecture of parallel databases.