SCS1613	DISTRIBUTED DATABASE	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVES

- To understand the advantage of distributed database
- To know the design issues involved in distributed database.
- To understand distributed concurrency control techniques.

UNIT 1 INTRODUCTION TO DISTRIBUTED DATABASE 9 Hrs.

Introduction of Distributed Databases-Features of Distributed Databases-Distributed databases versus Centralized Databases- Principles-- Levels Of Distribution-Transparency-Reference Architecture- Types of Data Fragmentation- Integrity Constraints in Distributed Databases- Architectural Issues- Alternative Client/Server Architecture.

UNIT 2 QUERIES AND OPTIMAZATION 9 Hrs.

Global Queries to Fragment Queries- Equivalence Transformations for Queries- Distributed Grouping and Aggregate Function Evaluation- Parametric Queries- Optimization of Access Strategies- Framework for Query Optimization- Join Queries- General Queries- Introduction to Distributed Transactions.

UNIT 3 MANAGEMENT OF DISTRIBUTED TRANSACTIONS 9 Hrs.

Management of Distributed Transactions- Framework for Transaction Management-Supporting Atomicity of Distributed Transactions- Concurrency Control for Distributed Transactions- Architectural Aspects of Distributed Transactions-Concurrency Control- Foundation of Distributed Concurrency Control- Distributed Deadlocks-Concurrency Control based on Timestamps- Optimistic Methods for Distributed Concurrency Control.

UNIT 4 RELIABILTY AND PROTECTION 9 Hrs.

Reliability- Basic Concepts- Reliability and concurrency Control- Determining a Consistent View of the Network- Detection and Resolution of Inconsistency- Checkpoints and Cold Restart- Distributed Database Administration- Catalog Management in Distributed Databases-Authorization and Protection

UNIT 5 DATABASE INTEGRATION AND MANAGEMENT 9 Hrs.

Database Integration- Scheme Translation- Scheme Integration- Query Processing Query Processing Layers in Distributed Multi-DBMSs- Query Optimization Issues- Transaction Management Transaction and Computation Model- Multidatabase Concurrency Control- Multidatabase Recovery- Object Orientation And Interoperability- Object Management Architecture - Distributed Component Model.

Max. 45 Hours

TEXT / REFERENCE BOOKS

1. Distributed Database Principles & Systems, Stefano Ceri, Giuseppe Pelagatti, McGraw-Hill
2. Principles of Distributed Database Systems, M. Tamer Ozsu, Patrick Valduriez - Pearson Education.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100 **Exam Duration : 3 Hrs.**

PART A : 10 questions of 2 marks each- No choice **20 Marks**

PART B : 2 questions from each unit of internal choice, each carrying 16 marks **80 Marks**

Course Outcomes

1. Illustrate various principles of distributed database.
2. Classify the concurrency control techniques.
3. Demonstrate the framework for distributed transaction management.
4. Describe the emerging issues involved in distributed database.
5. Explain the query processing and optimization issues in distributed multi database.
6. Implement distributed component model.