

AMNE25 DISTRIBUTED SYSTEMS

UNIT-1 INTRODUCTION

- 1.1 Distributed data processing, what is a DDBS; Advantages and disadvantages of DDBS;
- 1.2 Problem areas; Overview of database and computer network concepts Distributed Database Management System Architecture Transparencies in a distributed
- 1.3 DBMS; Distributed DBMS architecture; Global directory issues

UNIT-2 DISTRIBUTED DATABASE DESIGN

- 2.1 Alternative design strategies; Distributed design issues;
- 2.2 Fragmentation; Data allocation Semantics Data Control: View management; Data security;
- 2.3 Semantic Integrity Control Query Processing Issues: Objectives of query processing;
- 2.4 Characterization of query processors; Layers of query processing;
- 2.5 Query decomposition; Localization of distributed data

UNIT-3: DISTRIBUTED QUERY OPTIMIZATION:

- 3.4 Factors governing query optimization; Centralized query optimization; Ordering of fragment queries; Distributed query optimization algorithms Transaction Management:
- 3.5 The transaction concept; Goals of transaction management; Characteristics of transactions; Taxonomy of transaction models
- 3.6 Concurrency Control: Concurrency control in centralized database systems; Concurrency control in DDBSs;
- 3.7 Distributed concurrency control algorithms; Deadlock management

UNIT-4 RELIABILITY

- 4.1 Reliability issues in DDBSs; Types of failures;
- 4.2 Reliability techniques; Commit protocols; Recovery protocols

UNIT-5: PARALLEL DATABASE SYSTEMS

- 5.1 Parallel architectures;
- 5.2 Parallel query processing and optimization; load balancing

UNIT-6: ADVANCED TOPICS

- 6.1 Mobile Databases,
- 6.2 Distributed Object Management,
- 6.3 Multi-databases

References Books:

- 2. Principles of Distributed Database Systems, M.T. Ozsu and P. Valduriez, Prentice-Hall, 1991.
- 3. Distributed Database Systems, D. Bell and J. Grimson, Addison-Wesley, 1992.