AMNE11 DATABASE MANAGEMENT SYSTEMS

UNIT-1 INTRODUCTION

1.1 Characteristics of the Database approach,
1.2 Data models, schemas and instances
1.3 DBMS architecture, Data independence, Database languages and interfaces
1.4 Database administrator, Data modeling using Entity,
1.5 Relationship (ER), Entity sets, attributes and keys, Relationships,
1.6 Relationship types, roles and structural constraints
1.7 Weak Entity types, Enhanced Entity-Relationship (EER) and object modeling.
1.8 Sub classes, super classes and inheritance - Specialization and generalization.

UNIT-2 RECORD STORAGE AND FILE ORGANIZATIONS

2.1 Placing file records on disks, Fixed length and variable length records,
2.2 Spanned Vs Unspanned records, Allocating file records on disk,
2.3 Files of unordered records (Heap files), Files of ordered records (Sorted files).-
2.4 Hashing Techniques. Indexed structures for files
2.5 Types of single level ordered index, multi- level indexes.

UNIT-3 THE RELATIONAL MODEL:

3.1 Relational model concepts, Relational model constraints, The Relational Algebra,
3.2 Relational calculus, Tuple Relational calculus, and Domain Relational calculus, SQL.
3.3 Database Design: Functional dependencies, Basic definitions,
3.4 Trivial and non-trivial dependencies, Closure of a set of dependencies
3.5 Closure of a set of attributes, Irreducible sets of dependencies
3.6 Nonloss decomposition and Functional dependencies.
3.7 First, Second and Third normal forms, Boyce-codd normal form.

UNIT-4 TRANSACTION MANAGEMENT

4.1 Concurrency Control-Lost Update, Uncommitted Data-Inconsistent Retrievals,
4.2 The Scheduler, Concurrency Control with Locking Methods,
4.3 Concurrency Control with Time Stamping
4.4 Concurrency Control with Optimistic Methods
4.5 Database Recovery Management. Introduction to object oriented databases,
4.6 Active databases. Data warehouses, Data mining

References Books:

1. Elmasri and Navathe, “Fundamentals of Database Systems”, 5/e, Addison - Wesley, 2011.
2. Peter Rob Carlos Coronel, “Database Systems , Design, Implementation &Management “, 5/e,Thomson Course Technology
3. A Silberschatz, H. F. Korth, and S Sudarshan, “Database System Concepts”, 4/e,Tata McGraw Hill,2002