LESSON PLAN

Subject: Database Management System **Subject code: PC-IT-210A**

Session: 2022-23 **Semester: 4th**

SNo	Topic	No. of Lectures required	CO Covered	Teaching Methodology
1	**Unit – I** **Introductory Concepts:** Concept & Overview of DBMS	1		Chalk & Talk
2	Advantages of DBMS over File processing system	1		PPT
3	Database Languages –DDL and DML	1		Chalk & talk
4	Database Languages –DCL and TCL, Responsibilities of Database Administrator	1		PPT
5	Database Users	1		PPT
6	Three Schema Architecture of DBMS & Data Independence	1	CO1	PPT
7	Data Models	1		PPT
8	Entity-Relationship Model: Basic concepts, Mapping Constraints	1		Chalk & Talk
9	Entity-Relationship Model: Keys, Entity-Relationship Diagram – Student Management System	1		Chalk & Talk
10	Weak Entity Sets, Extended E-R features: Specialization and Generalization – Library Management System	1		Chalk & Talk
11	**UNIT 2: The relational Data Model & Algebra Relational Model :** Structure of Relational Databases	2		PPT
12	Relational Algebra Introduction - Select, Project, Union , Intersection, Set Difference operators	1		Chalk & Talk
13	Relational Algebra Introduction –Division operators and Join	1		Chalk & talk
14	Practice Problems on Relational Algebra -1		CO2	Chalk & Talk
15	Relational Calculus – Tuple relational Calculus	1		Chalk & Talk
16	Relational Calculus – Tuple relational Calculus contd.	1		Chalk & Talk
17	Relational Calculus – Domain relational Calculus	1		Chalk & Talk
18	**Integrity Constraints & Introduction to Sql :** Domain Constraints, Refrential Integrity Constraints	1		Chalk & Talk

19	Basic Structure & Concept of DDL and DML languages	1		Chalk & Talk
20	Basic Structure & Concept of DCL languages and Aggregate Functions – Sum(), MAX(), MIN(), AVG(), COUNT(), Having and Group By clause, NULL values	1		Chalk & Talk
21	Practice Problems on Queries -1			Chalk & Talk
22	Practice Problems on Queries -2			Chalk & Talk
23	Introduction to Views – Creation, Deletion and Modification	1		PPT
24	**Unit 3 – Relational Database Design :** Functional Dependency introduction, Closure computation	1	CO3	Chalk & Talk
25	Keys computation	1		Chalk & Talk
26	Different anomalies in designing a Database	1		Chalk & Talk
27	Normalization - 1NF, 2NF, 3NF	1		Chalk & Talk
28	Normalization – BCNF, 4NF, 5NF	1		Chalk & Talk
29	Practice problem on Normalization -1	1		Chalk & Talk
30	Practice problem on Normalization -2	1		Chalk & Talk
31	**Unit 4 – Transaction Processing Concept :** Introduction to transaction processing	1	CO4	PPT
32	Transaction Model properties	1		PPT
33	Serializability – Serial, Non-serial	1		Chalk & Talk
34	Serializable Schedules	1		Chalk & Talk
35	Conflict Serializability	1		Chalk & Talk
36	**Concurrency Control :** Need of Concurrency control	1		PPT
37	Different concurrency control techniques – Lock Based	1		PPT
38	Timestamp based technique	1		PPT
39	Deadlock handling and Recovery techniques	1		PPT
40	Deferred Update and Immediate Update Technique	1		PPT
41	Shadow paging	1		PPT