**SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL**

**LESSON-PLAN**

**Class: BCA 3th SEM Semester: ODD**

**Subject: INTRODUCTION TO DATABASE SYSTEM Session: 2020-21**

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| **Lecture Number** | **Topic** |
|  | UNIT 1 |
| **L 1-20** | Basic Concepts – Data, Information, Records and files. |
| Traditional file –Based Systems-File Based Approach, Limitations of File Based Approach. |
| Database Approach, Characteristics of Database Approach. |
| Advantages and Disadvantages of database system. |
| Components of database system, Database Management System (DBMS). |
| Components of DBMS Environment, DBMS Functions. |
| DBMS users, Advantages and Disadvantages of DBMS. |
| DBMS languages, Roles in the Database Environment - Data and Database Administrator. |
| Database Designers, Applications Developers and Users . |
| CLASS TEST |
|  | UNIT 2 |
| **L 21-35** | Database System Architecture – Three Levels of Architecture, External, Conceptual and Internal Levels. |
| Schemas, Mappings and Instances . Data Independence – Logical and Physical Data Independence. |
| Classification of Database Management System. |
| Centralized and Client Server architecture to DBMS . |
| Data Models, Records- based Data Models, Object-based Data Models. |
| Physical Data Models and Conceptual Modelling. |
| CLASS TEST |
|  | UNIT 3 |
| **L 35-55** | Entity-Relationship Model – Entity Types, Entity Sets. |
| Attributes , Relationship Types, Relationship Instances and ER Diagrams, abstraction and integration. |
| Basic Concepts of Hierarchical and Network Data Model. |
| Relational Data Model:-Brief History, Relational Model Terminology-Relational Data Structure. |
| Database Relations, Properties of Relations, Keys, Domains, Integrity Constraints over Relations. |
| CLASS TEST |
|  | UNIT 4 |
| **L 55-70** | Relational algebra, Relational calculus. |
| Relational database design: Functional dependencies, Modification anomalies. |
| Ist to 3rd NFs. |
| BCNF, 4th and 5th NFs. |
| computing closures of set FDs, SQL: Data types, Basic Queries in SQL. |
| Insert, Delete and Update Statements. |
| Views, Query processing. |
| General strategies of query processing, query optimization, query processor. |
| Concept of security, concurrency and recovery. |
| CLASS TEST |

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