**SARASWATI MAHILA MAHAVIDYALAYA, PALWAL**

**LESSON-PLAN**

**Class: BSC(CS) 5TH SEM Semester: ODD**

**Subject: Database Management 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, Database Management System (DBMS). |
| Components of DBMS Environment, DBMS Functions. |
| Advantages and Disadvantages of DBMS. |
| Classification of Database Management System. |
| Roles in the Database Environment - Data and Database Administrator. |
| CLASS TEST |
|  | UNIT 2 |
| **L 21-40** | Centralized and Client Server architecture to DBMS. |
| Database System Architecture – Three Levels of Architecture. |
| External, Conceptual and Internal Levels, Schemas, Mappings and Instances. |
| Data Independence – Logical and Physical Data Independence. |
| Data Models: Records- based Data Models. |
| Object-based Data Models, Physical Data Models. |
| Conceptual Modeling, Hierarchical Model. |
| Network and Relational model. |
| CLASS TEST |
|  | UNIT 3 |
| **L 41-55** | Entity-Relationship Model – Entity Types, Entity Sets, Attributes and keys. |
| Relationship, Relationship sets, Role name & recursive relationship. |
| Structural constraints, Conceptual design using E-R Diagrams. |
| Relational Data Model:-Introduction, Properties of Relations, Keys. |
| Integrity Constraints over Relations, Views. |
| Relational Database Design: Functional Dependencies. |
| Normalization: 1st to 3rd Normal Form. |
| BCNF, Lossless Join and Dependency preserving decomposition. |
| CLASS TEST |
|  | UNIT 4 |
| **L 56-70** | SQL: Types & components of SQL, Data Definition and data types. |
| Data definition commands, Data manipulation commands, Data Control Commands. |
| Specifying Constraints (Primary Constraint, Foreign key, Unique, Not Null) in SQL, Schema. |
| Basic Queries in SQL, Insert, Delete and Update operations. |
| Inbuilt Date, String functions,Commit, Rollback, Save points.  |
| Views: Introduction, Advantages of creating views. |
| Features, Destroying/ Altering table & Views. |
| CLASS TEST |

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