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| **GBN Govt. Polytechnic Nilokheri** |
| **Name of Faculty: Naresh Grover** |
| **Discipline: Computer Science & Engg.** |
| **Semester: 4th** |
| **Subject: Database Management System** |
| Lesson Plan Duration: 15 Weeks |
| **Week** | **Theory** | **Practical** |
|  | **Lecture Day** | **Topic(including assignment/Test)** | **Practical Day** | **Topic** |
| **I** |  | Database system: Introduction to database and its purpose | 1st (G1) | Exercise on creation and modification of structure of tables |
|  | Characterstics of database, approach, advantage and disadvantage of database system | 2nd(G2) | Exercise on creation and modification of structure of tables |
|  | Classification of DBMS users: Actors on the scene- Database Administrators, Database designers,End users – System Analyst and Application Programmers |  |  |
| **II** |  | Workers behind the scene (DBMS system designers and implementers, tools developers, operator andmaintenance personnel | 3rd (G1) | Revision of Exercise on creation and modification of structure of tables |
|  | Data Models, Schemas, instances, Database state, DBMS Architecture: External level, Conceptual level,Internal level, Mappings | 4th (G2) | Revision of Exercise on creation and modification of structure of tables |
|  | Data Independence: Logical data independence and physical data independence |  |  |
| **III** |  | Database Languages, DBMS interfaces, Classification of DBMS- Centralized, Distributed, Parallel andObject Based | 5th (G1) | Exercise on inserting and deleting values from tables |
|  |  | Data modeling using E-R Model | 6th(G2) | Exercise on inserting and deleting values from tables |
|  |  | Data Model Classification: File Based or primitive models, traditional data Models, Semantic Data Models |  |  |
| **IV** |  | Entities and Attributes, Entity Types and Entity Sets, Key Attribute and domain of attributes | 7th (G1) | Revision of exercise on inserting and deleting values from tables |
|  |  | Relationship among entities , database design with ER model | 8th (G2) | Revision of exercise on inserting and deleting values from tables |
|  |  | Revision of 1st , 2nd and 3rd unit |  |  |
| **V** |  | Relational model Concepts: Domain, Tuple, Attribute, Cardinality, Relation | 9th (G1) | Exercise on Querying the table using Select Command |
|  |  | Keys- Primary, Secondary, Foreign, Alternate. Relational Constraints and Relational Database schemes | 10th (G2) | Exercise on Querying the table using Select Command |
|  |  | Domain Constraints, key Constraints and Constraints on Null |  |  |
| **VI** |  | Relational Databases and Relational Database Schemes | 11th(G1) | Revision of Exercise on Querying the table using Select Command |
|  |  | Entity Integrity, Referential Integrity and Foreign Key | 12th(G2) | Revision of Exercise on Querying the table using Select Command |
|  |  | Comparison between ER Model and Relational Model |  |  |
| **VII** |  | Trivial and Non Trivial Dependencies | 13th(G1) | Exercise on using various types of joins |
|  |  | Non Loss Decomposition and Functional Dependencies | 14th(G2) | Exercise on using various types of joins |
|  |  | First and 2nd normal forms |  |  |
| **VIII** |  | Third normal form, BCNF, Denormalization | 15th(G1) | Revision of Exercise on using various types of joins |
|  |  | Revision of unit 4 | 16th(G2) | Revision of Exercise on using various types of joins |
|  |  | Revision of unit 5 |  |  |
| **IX** |  | Creating and using indexes, Creating and using views | 17th(G1) | Exercise on using functions provided by database package |
|  |  | Database security, Process controls | 18th(G2) | Exercise on using functions provided by database package |
|  |  | Database protection, grant and Revoke |  |  |
| **X** |  | DDL: Creating tables, Creating a table with data from another table | 19th(G1) | Revision of Exercise on using functions provided by database package |
|  |  | Inserting values into a table, Updating columns of a table | 20th(G2) | Revision of Exercise on using functions provided by database package |
|  |  | Deleting Rows, Dropping a table |  |  |
| **XI** |  | DML, Database Security and privileges, Grant and Revoke command | 21st(G1) | Exercise on Grant, Revoke, Commit and Rollback |
|  |  | Maintaining Database objects, commit and Rollback | 22nd(G2) | Exercise on Grant, Revoke, Commit and Rollback |
|  |  | Various types of select commands |  |  |
| **XII** |  | Various types of joins, subquery | 23rd(G1) | Revision of Exercise on Grant, Revoke, Commit and Rollback |
|  |  | Aggregate functions , Challenges of My Sql | 24th(G2) | Revision of Exercise on Grant, Revoke, Commit and Rollback |
|  |  | Introduction to Big Data |  |  |
| **XIII** |  | Understanding Big data with samples | 25th(G1) | Design of Database for any application |
|  |  | Revision of Unit 1 | 26th(G2) | Design of Database for any application |
|  |  | Revision of Unit 2 |  |  |
| **XIV** |  | Revision of Unit 3 | 27th(G1) | Viva of practical no. 1 to 3 |
|  |  | Revision of Unit 4 | 28th( G2) | Viva of practical no. 1 to 3 |
|  |  | Revision of Unit 5 |  |  |
| **XV** |  | Revision of Unit 6 | 29th(G1) | Viva of practical no. 4 to 7 |
|  |  | Revision of Unit 7 | 30th( G2) | Viva of practical no. 4 to 7 |
|  |  | Pre Exam Conduct |  |  |