**GOVERNMENT POLYTECHNIC COLLEGE**

**PURASAWALKAM, CHENNAI - 12**

**DEPARTMENT OF COMPUTER ENGINEERING**

**III YEAR / V SEM / FIRST SHIFT**

**35252- RELATIONAL DATABASE MANAGEMENT SYSTEMS**

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| **Subject handled by:** PANDI C **Designation :** Part Time / Guest Lecturer  |
| **HOURS** | **CHAPTER NO** | **PORTIONS COVERED** | **DATE** |
| **UNIT - I Database Systems and data modelling (14 HRS)** |
|  **1** | **1.1** | Introduction to database **Database systems:** Database Management System , Characteristics of Database Components of Database , Functions of Database , Understanding database model, Evolution  | **11.06.18** |
|  **2** |
| **3** | **1.1** | Types of database models: Hierarchical Database Model, Network Database Model, Relational Database Model.  | **12.06.18** |
|  **4** |
|  **5** | **1.2** | Transactional Databases, Decision Support Databases and Hybrid Databases , Open Source databases  | **12.06.18** |
|  **6** |
|  **7** | **1.3** | **Relational data model:** CODD’s rules ,Components of RDBMS  | **14.06.18** |
| **` 8** | Table structure,Records,rows, tuples , attributes. Keys : Primary, Foreign , Composite, unique keys  | **14.06.18** |
|  **9** | Meta Data, Data Dictionary. Data Integrity - Data Constraints and validation : Types of Constraints Difference between SQL and MYSQL  | **15.06.18** |
| **10** |
| **11** | **1.4** | **ER Diagram and Normalization:** Methodologies of Designing Database,Entities-Relationships (1:1, 1 : many and many : many)  | **18.06.18** |
| **12** | ER Diagram – Samples .  | **19.06.18** |
| **13** | Normalization : Benefits ,Normal Forms , 1st Normal Form, 2nd Normal Form , 3rd Normal Form .  | **21.06.18** |
| **14** | **1.5** | **Database Administration : Server/client And Distributed concept:** DBA Tasks ,DBA Tools | **22.06.18** |
| **15** | Data Base Maintenance – Backup and Recovery  | **22.06.18** |
| **HOURS** | **CHAPTER NO** | **PORTIONS COVERED** | **DATE** |
| **UNIT-II MySQL Administration & Database Design 15 HOURS**  |
| **16** | **2.1** | **Installation of MySQL:**Features of MySQL,Download, Installing, Starting & Stopping connections to the MySQL server  | **26.06.18** |
| **17** | Accessing MySQL ,Command Line, Web Interface (PHP Myadmin) and Desktop Tools (MySQL workbench)  | **28.06.18** |
|  **18** | **2.2** | **Working with MySQL Databases :** Creating (CREATE cmd), selecting (USE cmd) And describing database (DESC cmd)  | **29.06.18** |
| **19** | SHOW cmd - backing up databases.  | **29.06.18** |
| **20** | **2.3** | **Introduction to MySQL :** MySQL data types  | **2.7.18** |
| **21** | Data Definition Commands: creating, altering, renaming, copying and deleting tables , temporary tables  | **3.7.18** |
| **22** | Data manipulation commands : Insert, update & deleting rows. Data retrieval commands.  | **5.07.18** |
| **23** | MySQL Operators and Expressions : Types of operators ,Arithmetic, comparison & logical operators , Pattern matching , Import and Export of data  | **09.07.18** |
| **24** | **2.4** | **Built-in Functions:** Single row functions  | **10.07.18** |
| **25** | Aggregate functions ,Conversion functions  | **12.07.18** |
| **26** | **2.5** | **Querying the table:** Selecting rows using Where , Order by , group by & Having clauses.  | **13.07.18** |
| **27** | Sub-queries ,operators used in sub-queries  | **13.07.18** |
| **28** | correlated sub-queries  | **16.07.18** |
| **29** | **2.6** | **Flow control :** IF(), IF NULL(),CASE,LOOP,LEAVE,ITERATE,REPEAT,WHILE  | **17.07.18** |
|  **UNIT- III MySQL Performance Tuning 11 HOURS**  |
| **30** | **3.1** | **Indexes and sequences:** Creating index primary key (single & multiple field) & foreign key, unique key, composite keys,  | **23.7.18** |
| **31** | full text indexing ,leftmost indexing -dropping index | **23.07.18** |
| **32** | Sequences: creating, altering and deleting sequences.  | **24.07.18** |
| **HOURS** | **CHAPTER NO** | **PORTIONS COVERED** | **DATE** |
| **33** | **3.2** | **Performing multiple table retrieval using Joins & Unions:** Joins – definition – aliasing | **26.7.18** |
| **34** | **3.2** | Types of Joins: natural join, inner join, self-join, left join, right join.  | **27.07.18** |
| **35** | Unions: Definition ,Types ,Union, Union ALL Union Distinct – order by and LIMIT handling.  | **27.7.18** |
| **36** | **3.3** | **Views:** Introduction – Advantages of Views- creating Views | **30.07.18** |
| **37** | Updating the Views, Deleting the Views.  |
| **38** | **3.4** | **User & Transaction management:** creating users, deleting users, renaming users  | **1.08.18** |
| **39** | grant & revoke commands  | **2.08.18** |
|  **40** | Transactions ,committing & rollback transactions ,save points.  | **03.08.18** |
| **UNIT- IV Storage Engines, Stored Program concept , Optimization & API’s 14 HOURS**  |
| **41** | **4.1** | **Storage Engines:** MySQL Storage engines | **03.08.18** |
| **42** | Choosing the right engine,Types of storage engines, MyISAM, InnoDB & Memory  | **14.08.18** |
| **43** | Features – Advantages and disadvantages of storage engines .  | **16.8.18** |
| **44** | **4.2** | **Stored Procedures & Functions:** Definition ,Creating stored Procedures,Invoking - Dropping procedures  | **18.08.18** |
| **45** | Creating and calling stored functions, Deleting stored functions , Advantages.  | **18.08.18** |
| **46** | **4.3** | **MySQL trigger,** Use of trigger  | **20.08.18** |
| **47** | , Creating triggers ,Types of trigger ,Deleting triggers  | **21.08.18** |
| **48** | Cursor creation ,Cursor deletion.  | **23.08.18** |
| **49** | **4.4** | **MySQL Optimizations:** Query optimization using EXPLAIN command.  | **24.08.18** |
| **50** | **4.5** | **MySQL and web:** Need for own MySQL programs  | **24.08.18** |
| **HOURS** | **CHAPTER NO** | **PORTIONS COVERED** | **DATE** |
| **51** |  **4.5** | MySQL’s Application Programming Interfaces  | **27.08.18** |
| **UNIT - V Data warehousing & Introduction to Big data 11 HOURS**  |
| **52** | **5.1** | Introduction Data warehousing Functions of Warehouse | **01.09.18** |
| **53** | **Data warehousing :**Architecture , Applications of data ware house | **03.09.18** |
| **54** | Data mining concepts, Advantages. | **04.09.18** |
| **55** | **5.2** | **Big Data :** Definition ,Characteristics  | **06.09.18** |
| **56** | Various Technologies used in big data, Applications  | **06.09.18** |
| **57** | Overview of NoSQL ,Difference between RDBMS and NoSQL | **07.09.18** |
| **58** | Tools used in Big Data  | **07.09.18** |
| **59** | Scalability, Understanding storage architecture  | **08.09.18** |
| **60** | **5.3** | **Types of Data stores in NoSQL:** Column oriented data store, Document Store, Key value Store & Graph store  | **10.09.18** |
| **61** | create, access, update and delete data  | **11.09.18** |
| **62** | Querying NoSQL Stores  | **14.09.18** |
| **63** | Using NoSQL in the cloud - Amazon Simple DB  | **14.09.18** |