**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** | |