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| **Group A** | | | |
| 1 | A1 | Study and Draw ER Modelling digram along with normalization using ERDwin/ERD plus for selected problem statement. | 3-7 |
| 2 | A2 | 1. Design and develop SQL DDL statements which demonstrates use of SQL objects such as Table, View, Index, Sequence, and Synonym. 2. Design at least 10 subqueries for suitable database application using DML statements: Insert, select, Update and Delete with operators, functions and set operators | 8-12 |
| 3 | A3 | Design at least 10 subqueries for suitable database application using DML statements: all types of joins, subquery and Views. | 13-17 |
| 4 | A4 | Write Unnamed PL/SQL code block: use of control structures and exception handling | 18-21 |
| 5 | A6 | Write Named PL/SQL stored procedure and stored function. | 22-24 |
| 6 | A7 | Write a PL/SQL block of code using Implicit , Explicit, for loop and parameterized cursor that will merge the data available in the newly created table.. | 25-31 |
| 7 | A8 | Write a database trigger on a library table. The system should keep track of the records that are being updated or deleted. The old value of updated or deleted records should be added in newly created table. | 32-37 |
| 8 | A9 | Implement MYSQL/ORACLE database connectivity with PHP/PYTHON/JAVA implement database navigation operations using JDBC/ODBC. | 38-39 |
| **Group B** | | | |
| 9 | B1 | Design and develop MongoDB queries using CRUD operations, SAVE method and logical operators. | 40-44 |
| 10 | B2 | Implement Indexing and Aggregation using MongoDB |  |
| 11 | B3 | Implement Map-reduce operation with suitable using MongoDB. | 45-49 |
| 12 | B4 | Write a program to implement MongoDB database connectivity with PHP/PYTHON/JAVA implement database navigation operations using JDBC/ODBC. | 50-56 |
| **Group C** | | | |
| 14 | C1 | According to DBMS concept covered in Group A and D develop and application using provided guidelines. | 67-70 |

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| Sr.No |  | Problem Statement for lab assignment |
| 1 | A1 | Consider your project problem statement |
| 2 | A2 | 1. An employee management system needs to record following data about employees – ID, Name, Age, Department, Salary, Experience, AreaOfExperties. Identify columns, their data types and write create statement. Define primary key.  * Create a view that will display all details of the employee except Salary and AreaOfExperties. * Create a sequence to generate employee id. * Create an index for the column ID. * Create a synonym for the generated table as “EMP” and demonstrate its use. |
|  | A2 | 1. Create above tables and insert few rows in each table. Solve following query: 2. Find the branches where average account balance > 12000. 3. Find all customers who have an account or loan or both at bank. 4. Find all customers who have both account but not loan at bank. 5. Delete all tuples at every branch located in ‘Nigdi’. 6. Find Maximum loan amount in branch ‘Nigdi’ 7. Find no. of depositors at each branch.   For all accounts in Akurdi branch increase the balance by 10%. |
| 3 | A3 | Create above tables and insert 5 rows in each table. Give an expression in SQL for each of the following queries:   1. Find the names, street address, and cities of residence for all employees who work for 'First Bank Corporation' and earn more than $10,000. 2. Find the names of all employees in the database who live in the same cities as the companies for which they work. 3. Display employee details that live in cities Pune, Mumbai, and Nasik 4. List employees from ‘First Bank Corporation’ that earn salary more than all employees of ‘Small Bank Corporation’ 5. Create a view that will display employee details along with name of his/her manager. 6. Find average salary of employees of ‘First Bank Corporation’.   Give employees of ‘First Bank Corporation’ 15% rise if salary is less than 20000. |
| 4 | A4 | . Borrower(Rollin, Name, DateofIssue, NameofBook, Status)  2. Fine(Roll\_no,Date,Amt)   * Accept roll\_no & name of book from user. * Check the number of days (from date of issue), if days are between 15 to 30 then fine amount will be Rs 5per day. * If no. of days>30, per day fine will be Rs 50 per day & for days less than 30, Rs. 5 per day. * After submitting the book, status will change from I to R. * If condition of fine is true, then details will be stored into fine table. |
| 5 | A6 | Write a Stored Procedure namely proc\_Grade for the categorization of student. If marks scored by students in examination is <=1500 and marks>=990 then student will be placed in distinction category if marks scored are between 989 and900 category is first class, if marks 899 and 825 category is Higher Second Class  Write a PL/SQL block for using procedure created with above requirement.  Stud\_Marks(name, total\_marks)  Result(Roll,Name, Class)  Stored function:  Write a function namely func\_Grade for the categorization of student. If marks scored by students in examination is <=1500 and marks>=990 then student will be placed in distinction category if marks scored are between 989 and900 category is first class, if marks 899 and 825 category is Higher Second Class  Write a PL/SQL block for using function created with above requirement.  Stud\_Marks(name, total\_marks)  Result(Roll,Name, Class) |
| 6 | A7 | * + - 1. Write PL/SQL block using explicit cursor for following requirements:   College has decided to mark all those students detained (D) who are having attendance less than 75%. Whenever such update takes place, a record for the same is maintained in the d\_stud table.   * + - 1. Write a PL/SQL block of code using parameterized Cursor, that will merge the data available in the newly created table new\_class with the data available in the table old\_class. If the data in the first table already exist in the second table then that data should be skipped.       2. An explicit cursor FOR LOOP statement prints the last name and job ID of every clerk whose manager has an ID greater than 120. |
| 7 | A8 | Database Trigger (All Types: Row level and Statement level triggers, Before and After Triggers). Write a database trigger on Library table. The System should keep track of the records that are being updated or deleted. The old value of updated or deleted records should be added in Library\_Audit table.  Frame the problem statement for writing Database Triggers of all types, in-line with above statement. The problem statement should clearly state the requirements. |
| 8 | A9 | Implement MYSQL/ORACLE database connectivity with PHP/PYTHON/JAVA implement database navigation operations using JDBC/ODBC. |
| 9 | B1 | Create a collection **employee** in mongodb and insert few documents with fields (emp\_id, emp\_name, dept, salary)   1. Find employees having salary greater than 50000 2. Find employees having salary between 50000 and 80000 3. Find employees having salary more than 60000 from ‘HR’ department 4. Update marks of all students from ‘Civil’ department. Set marks to 30   Delete students from ‘Chemical’ department having marks less than 30 |
| 10 | B2 | Create a collection **employee** in mongodb and insert few documents with fields (emp\_id, emp\_name, dept, salary)   1. Display maximum salary in each department 2. Display minimum salary in each department 3. Display average salary in each department 4. Display number of employees in each department |
| 11 | B3 | Create a collection books in mongodb and insert few documents with fields (book\_id, title, author, type)  Write a MapReduce function to display number of books of each type |
| 12 | B4 | Write a program to implement MongoDB database connectivity with PHP/PYTHON/JAVA implement database navigation operations using JDBC/ODBC. |
| 14 | C1 | According to DBMS concept covered in Group A and D develop and application using provided guidelines. |