



All rights reserved.

NVQ Level 05 –Semester II		
Information & Communication Technology		
Database Systems 11 – Theory	K72T001M02	Three Hours
Answer only 03 questions (Question 01 and 02 are COMPULSORY).		

Use the given tables below to answer your questions.

Employee (Empid char(04), Fname varchar(10), Lname varchar(20), City varchar(75), Bdate Date, Designation varchar(25), Date_Joined Date, Salary Number(7,2), Dnum char(03))

Project (Pnumber, Pname, Plocation, Dnum)

Department (Dnum, Dname, Mgr_Id, Dlocation, Total_Salary)

Works_on(Empid, Pnumber, Date_joined, Payment, Hours)

Note:

Mgr_Id denotes the Empid of the employee who manages the department

Question 01:

1. Write suitable code to create a database named '**Company**'. **(3 marks)**
2. Write SQL Statement to create the **Employee** table with the given data types (No need to insert the records) **(6 marks)**
3. Write SQL Statement to add a new record to Department table with following details Dnum- '025', Dname - 'Marketing', Mgr_Id—'M324', Dlocation - 'Kandy' **(4 marks)**
4. Update salaries of all employees in the 'Research' department with a 10 percent raise in salary. **(6 marks)**
5. Write the code to delete the records from Works_on table with respect to the employees who have joined the project 10 years before the current date. **(6 marks)**

Question 02:

Write the SQL queries for the following.

1. Show all employees Fname, Lname, Designation and Salary in the ascending order of Salary values.
2. Retrieve the birth date and address of the employee(s) whose name is 'Kapila Dias'.
3. Show the Employee details who come from city 'Colombo' and whose first name starts with 'G'.
4. Retrieve all employees in department Number 5 whose salary is between Rs.30,000 and Rs. 50,000.
5. Selects the **project numbers** and **names of projects** that have an employee with last name 'Silva' involved as worker.
6. For every project located in **Galle**, list the project number, the controlling department name, and the department manager's last name, city, and birth date.
7. For each project, retrieve the project number, the project name, and the number of employees who work on that project.
8. For each project, retrieve the project number, the project name, and the number of employees from department 5 who work on the project.
9. Show the resulting salaries if every employee working on the project named **Port City** is given a 10 percent raise.
10. For each project on which more than two employees work, retrieve the project number, the project name, and the number of employees who work on the project.

(10 x 05=50 marks)

Question 03:

1. Create an index on Empid for Employee table.
2. Write the SQL to modify the table **Department** with foreign key constraint stating suitable actions to be taken for update and delete operations.
3. Create a view to display Fname, Lname, Pname and Hours.
4. Create a view to display Dname and the total number of employees (No_of_emps) who are working for each department.
5. Write the syntax to create a user with a password.

(05 x 5=25marks)



Question 04:

1. Write down three differences between stored procedures and triggers.
(6 marks)
2. Write the code to create a stored procedure named '**award_bonus**(emp_id IN NUMBER, bonus_rate IN NUMBER)' to provide a salary increment to the current salary with the given bonus rate (i.e. $\text{salary} = \text{salary} + \text{salary} * \text{bonus_rate}$). The stored procedure should also print a message '*Employee <emp_id> receives a bonus:<bonus amount>*'.
(7 marks)
3. Write the code to create a function named '**total Employees (Dnum char(03))**' to return the number of employees working for a given department.
(6 marks)
4. Write the code to create a trigger named '**Total_sal1**' to update the total salary value of the relevant department when a new employee is inserted into the Employee table.
(6 marks)

