

Tertiary and Vocational Education Commission

NVQ Level 05 – Semester II

Information & Communication Technology

Database Systems II – Theory

K72T001M02

Three Hours

Answer only 04 questions (Question 01 and 02 are COMPULSORY).

Question 01

- 1.) Explain the following terms briefly. (Marks 12)
 - a) Foreign key
 - b) DML (Data Manipulation Language)
 - c) Many-to-many relationship
- 2.) Explain any four aggregate functions with example. (Marks 08)
- 3.) List two data manipulation (DML) commands in SQL. (Marks 05)

Consider the following relations for **Question 02** and **Question 03**:

Employee (emp_id:integer, emp_name:varchar(15), designation: varchar(10), dob: date, hire_date:date, salary:decimal(10,2), commission: decimal(7,2), dep_id:integer)
Department (dep_id: integer, dep_name: varchar(20), dep_location: varchar(15))
Salary_Grade (grade: integer, min_salary: integer, max_salary: integer)

Question 02

- 1.) Write SQL statement to create a Department table with the PRIMARY KEY constraint. (Marks 05)
- 2.) Write the following queries in SQL using above relations:
 - a) Display the salaries of all the employees' with employee name and designation according to ascending order of employee name. (Marks 05)
 - b) Display the unique designations for the employees. (Marks 05)
 - c) List out all the employee names whose designation is 'CLERK'. (Marks 05)
 - d) Find the employee names whose salaries are less than 3500. (Marks 05)

Question 03

Write the following queries in SQL using above relations:

- 1.) Find the average salaries of all the employees who work as 'ANALYST'.
(Marks 04)
- 2.) Find the employee names whose are either 'CLERK' or 'MANAGER' designation.
(Marks 04)
- 3.) Find the employee names, designations and salaries with department names.
(Marks 05)
- 4.) Find the employee names whose salary grade is 4.
(Marks 06)
- 5.) List all the employee names except 'CLERK' and 'MANAGER' designations according to the descending order of salaries.
(Marks 06)

Question 04

Consider following Employee table for the sections 2 and 3

Employee (emp_id:integer, emp_name:varchar(15), designation: varchar(10), dob: date, salary:decimal(10,2))

- 1.) What is a Trigger?
(Marks 05)
- 2.) Create a stored procedure to get the employee name, and dob of all employees from the above Employee table.
(Marks 07)
- 3.) Create a view employee with emp_id, emp_name and salary where salary=55000 from employee table.
(Marks 07)
- 4.) What is difference between DELETE and TRUNCATE commands?
(Marks 06)

Question 05

- 1.) What is Cursor?
(Marks 06)
- 2.) What is the difference between COMMIT and ROLLBACK?
(Marks 06)
- 3.) Write two ways in which a database developer might increase the performance of database transactions.
(Marks 07)
- 4.) Write two responsibilities of Database Administrator (DBA).
(Marks 06)