

Department of Technical Education and Training		
NVQ Level 05 Written Examination - December 2011 (Semester I)		
National Diploma in Information & Communication Technology		
Database Systems I	5S1NVQ 001	Three Hours
Instructions: Answer five (05) questions.		

1. Explain in brief (with one or two sentences.)
 - i. Data models (06 Marks)
 - ii. DDL & DML (05 Marks)
 - iii. Three-Schema Architecture (09 Marks)

2.
 - i. Write down main phases in Database System Development Life Cycle (12 Marks)
 - ii. Write eight (08) Advantages of DBMS (08 Marks)

3.
 - i. Explain the following terms related to design of Databases
 - Entity
 - Attributes
 - Relationship
 - Cardinality
 - Keys (2x5 Marks)
 - ii. Consider an Education database which consists of information of Students who are graduated and their respective Universities. Students have the attributes of student number, student name, Address and Telephone number. Universities have the attributes of Name, Address, Telephone number. Draw the Entity - Relationship diagram for entities called Student and University. (10 Marks)

4.
 - i. What are the Benefits of Database Normalization? (05 Marks)
 - ii. Normalize the following table to 1NF, 2NF and 3NF. (15 Marks)

Customer_Rental (Customer_No, Property_No, Customer_Name,
Property_Address, Rent_Start, Rent_Finish, Rent,
Owner_No, Owner_Name)

5. Consider the following Database tables.

SalesPeople(Snum, Sname, City, Commission)

Customers(Cnum, Cname, City, Rating, Snum)

Orders(Onum, Amount, Odate, Cnum, Snum)

Write SQL statements for the followings

- a. Write a query that will give you the names and cities of all salespeople in Colombo with a commission above 0.10. (10 Marks)
- b. Write a query that produces all customers serviced by salespeople with a commission above 12%. The customer's name, the salesperson's name, and the salesperson's rate of commission are to be displayed. (10 Marks)

6. Consider the following Database tables.

SalesPeople(Snum, Sname, City, Commission)

Customers(Cnum, Cname, City, Rating, Snum)

Orders(Onum, Amount, Odate, Cnum, Snum)

Write SQL statements for the followings

- a. Write a query that uses a sub query to obtain all orders for the customer named "Fernando". Assume you do not know his customer number (Cnum). (10 Marks)
- b. Write a command that puts the following values, in their given order, into the Sales People table: City – Kandy, Name- Thilakaratne, Commission- NULL, Snum-1100 (10 Marks)

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