Department of Technical Education and Training 000312

NVQ Level 05 Written Examination – December 2017 (Semester I)

National Diploma in Information and Communication Technology

Database Systems I	**5SINVQ001**	**Three hours**

Instructions: **Answer four (04) questions.**

(This paper consists of 02 pages)

1. (i) Briefly describe what is DBMS. (05 Marks)

   (ii) What is a key in database? State five different keys in database (10 Marks)

   (iii) Briefly explain the difference between Normalization and Denormalization. (10 Marks)

2. (i) What are aggregate and scalar functions? Explain it by giving examples. (04 Marks)

   (ii) State three- schema architecture and interact group with each schema. (06 Marks)

   (iii) Using example briefly explain the difference between 'Primary Key' and 'Secondary Key'. (15 Marks)

3. (i) Construct a suitable ER diagrams with suitable relations for the following details.

   Person (Driver-id, Name, Address)

   Car (License, Year, Model)

   Accident (Report- number, Date, Location)

   Participated(Driver-id, License, Report-number, Damage-amount)

   (for a car- insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents.) (15 Marks)

   (ii) Transform the above ER diagram to a relational schema. (10 Marks)

4. (i) State 3 stages of a database design and briefly explain them. (09 Marks)

   (ii) State and briefly explain the different types of SQL statements. (09 Marks)

   (iii) What is a Database Lock? What are the types of locks? (07 Marks)

5.

Product

Product ID	Product Name	Supplier ID	Category ID	Unit	Price
245	Macaroni	1	1	10 boxes×20 bags	18
375	Tomato Sauce	1	1	24-12 oz bottles	19
542	Aniseed Syrup	1	2	12-550 ml bottles	10
175	Curry Seasoning	2	2	48-6 oz jars	22
247	Fruit Mix	2	2	36 boxes	21.35
246	Berry Spread	3	2	12-8 oz jars	25
248	Organic Pears	3	7	12-1 lb pkgs.	30
377	Cranberry Sauce	3	2	12-12 oz jars	40
455	Cheesecake	4	6	18-500 g pkgs.	97
456	Iclayers	4	8	12-200 ml jars	31

Considering the above 'Product' table, write SQL statements for the following.

(i) Create the above table call **Product** and fields by giving suitable data types. (10 Marks)

(ii) Select the minimum **Price** where the **Category ID** is equal to "2". (05 Marks)

(iii) Delete the column named **Unit** in the **Product** table. (05 Marks)

(iv) Update the **Price** to '25' of **Product Name** is equal to 'Tomato Sauce' (05 Marks)

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