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Daffodil International University

Department of Software Engineering
Faculty of Science & Information Technology
Final Examination, Fall 2022
Course Code: SE223; Course Title: Database Systems
Sections & Teachers: NJ

Time: 2:00 Hrs **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.

Seller

SID	Name	StoreID
11	Abul	1011
12	Babul	1021
13	Karina	1022
24	Rahim	1011

Invoice

InvoiceId	OnionType	Price	SellerID	QtyKG	Date
O112	Egypt	40	11	6	11 Dec 2019
O223	Bangla	130	13	2.5	10 Dec 2019
O334	India	90	11	3	8 Dec 2019
O445	Bangla	130	24	2	10 Dec 2019
O446	Bangla	130	11	5	10 Dec 2019
O447	India	90	13	4	11 Dec 2019
O449	India	90	11	5	11 Dec 2019

[CLO -3]

a) A. *Consider the following relation:* *[Marks-15]*

I. Solve sql statement using subquery to find the seller name whose sold quantity more than any seller who sold at 11th December 2022.

II. Solve sql statement using subquery to find the oniontype which are sold highest amount.

III. Solve sql statement using subquery to find those sellername who sold at 11 th December 2019.

IV. Solve sql statement to show the name of Seller who sells Indian Onlion.

V. Solve sql statement to find the Onion which has highest price than all others.

VI. Solve sql statement to show the total price of each type onion those are sold.

VII. Solve sql statement to find the store id which have more than one employee.

VIII. Solve sql statement to show the price of onion which is more than 40 taka per kg.

IX. Solve sql statement to find seller name and ID whose name starts with K.

X. Solve sql statement to find the invoice info which price is in between 40and 190.

XI. Solve sql statement to find the sellers whose name contains h in 3rd position

XII. Solve sql statement to find the list of oniom using distinct.

XIII. Solve sql statement to add a column address in the seller table

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	XIV. Solve sql statement to delete data of Babul XV. Solve sql statement to find highest price.		
a)	a. Interpret ***functional dependency***? Relate the functional dependency from the following relation? **Student** **StudentID** | **Student-name** | **StudentAddress** | **courseno** | **coursetitle**	*[Marks-2]*	*[CLO-2, Level-2]*
b)	Consider the Billing Receipt for Project Development Form given below: **Billing Receipt** **Project No:** *1001* **Project Name: Class Monitoring System** **Bill No:** *405* **Bill Date:** *12/01/22* **Dept No:** *210* **Dept Name:** **Marketing** **Dept Location:** **Ashulia, Dhaka**	*[Marks-8]*	*[CLO-2, Level-4]*
c)	Is there any ***composite key*** in the question b? briefly **demonstrate** with appropriate reason.	*[Marks-2]*	*[CLO-2, Level-2]*
d)	**List** the rules of normalization and summarize why we need normalization to design database.	*[Marks-4]*	*[CLO-2, Level-2]*
e)	**Explain** FOUR anomalies for the question b.	*[Marks-4]*	*[CLO-2, Level-3]*
f)	Develop an ERD for the question b identifying entity, attributes, relationship and cardinality.	*[Marks-5]*	*[CLO-2, Level-3]*

Employee No	Name	Responsibility	Rate/Hour	Chargeable Hour	Total
800	Arif Rahman	Analyst	$100	20	$2000
801	Rani	Developer	$80	40	$3200
805	Afjal	Developer	$70	40	$2800
806	Raihan	Tester	$50	50	$2500
Grand Total					$10500

Analyze the above scenario for project billing system and normalize the table up to Third Normal Form (3NF); explaining every steps of the process.

Note: You may add or delete rows as per your requirements. Mention CLO's in the right side of the table as per your course outline.