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Daffodil International University

Faculty of Science & Information Technology

Department of CIS

Quiz 2, Spring 2026

Course Code: BI417; Course Title: INFORMATION SYSTEMS FOR BUSINESS INTELLIGENCE

Section: A

Time: 30 Mins **Marks: 15**

Answer ALL Questions

[The figure in the right margin indicates the full marks. All portions of each question must be answered sequentially.]

1	**Scenario: Courier BI Performance** A courier company's operational dashboard takes 90 seconds to load. Monitoring shows CPU usage at 30%, RAM usage at 95%, and a full scan of a 15-million-row delivery table whenever users filter by **delivery_date**. **a)** Identify the two most likely performance bottlenecks. **b)** Recommend one suitable technical improvement.	**2** **1**
2	**Scenario: Courier Reporting Table** A company stores shipment data in one relation: **shipment_report**(ShipmentID, BookingDate, CustomerID, CustomerName, CustomerPhone, BranchID, BranchName, District, ServiceType, DeliveryCharge, DeliveryStatus) **a)** Identify any two redundancy or anomaly risks in this design. **b)** Propose four normalized tables and indicate their primary and relevant foreign keys.	**2** **2**
3	**Scenario: Courier BI Model** Management wants to analyze shipment volume, delivery revenue, delivery time, and failed deliveries by booking date, customer, branch, service type, and delivery district. **a)** Name a suitable fact table and clearly define its grain. **b)** List any four appropriate dimension tables.	**2** **2**
4	**SQL for Decision Making** Given **deliveries**(delivery_id, delivery_date, branch, district, service_type, delivery_status, delivery_charge), write one SQL query to show total delivery revenue and the number of delivered shipments by branch for Dhaka and Chattogram districts only. Include only branches with total revenue above 500,000 and display the highest revenue first.	**4**

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