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Daffodil International University
Faculty of Science & Information Technology
Department of Software Engineering
Final Examination, Spring 2026
Course Code: SE212; Course Title: Software Requirements Specification
Sections & Teachers: RMS(A-B), KBB(E-G), RHH(H-K), MJM(L-O), AG(P)
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.]

Daffodil International University has introduced a mobile-based application called LibraryPlus that helps students and faculty manage library services. When a user opens the app, they log in using their university ID and password. After logging in, users can search for books, journals, and digital resources by title, author, subject, or ISBN. The system shows details such as availability, shelf location, number of copies, and expected return date.

Users can reserve books that are not available. When the book becomes available, the system sends a notification. At the library, users scan their ID card to issue or return books. The system updates records and inventory automatically. Each borrowed item has a due date. If a user returns a book late, the system calculates a fine and sends reminders. Users can see their borrowing history, current books, and fines in the app. If internet connection is lost, data is saved locally and synchronized later. The system provides secure login, fast search, and reliable data storage. Librarians can use a dashboard to manage books and view reports.

1	a	Explain the system requirements of LibraryPlus by preparing a structured SRS table that includes at least 6 Functional Requirements and 3 Non-Functional Requirements.	[Marks: 10]	CLO-2 | Level-2
2	a	Develop a detailed use case description for the "Reserve a book" functionality described in the scenario.	[Marks: 8]	CLO-3 | Level-3
	b	Apply the MoSCoW requirement prioritization technique to organize the requirements of this system.	[Marks: 7]	

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	c	Construct a Requirement Traceability Matrix (RTM) for the system described in the scenario. Identify how each requirement can be traced throughout the development lifecycle, from source to implementation and testing.	[Marks: 8]	

Dhaka has introduced a mobile application called SmartWaste to improve waste collection services. Residents log in using their phone number and password. After logging in, they can see their waste collection schedule, including date, time, and waste type (general, recyclable, organic). Users can report missed collections by submitting a request with their location and details. The system sends this request to the waste management team. Users also receive notifications before collection time and updates if there are delays.

Waste collection workers use the app to view assigned routes and mark collections as completed. The system tracks each task and updates the status in real time. If there is no internet connection, the app stores data and updates it later when the connection is restored. The system ensures secure data, quick response time, and continuous service. City administrators use a dashboard to monitor collection performance, complaints, and service efficiency.

3	a	Analyze the scenario and create a prototype design for the SmartWaste application. Break down the key user interface components, and functionalities that reflect user expectations and system operations.	[Marks: 7]	CLO-4 | Level-4

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.