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Daffodil International University

Faculty of Science & Information Technology
Department of Software Engineering
Midterm Examination, Spring 2026

Course Code: SE212; Course Title: Software Requirements Specification & Analysis

Sections & Teachers: RMS(A-B), KBB(E-G), RHH(H-K), MJM(L-O), AG(P)

Time: 1 Hour 30 Mins **Marks: 25**

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.]

GreenLeaf AgroTech Ltd. has recently deployed a Smart Farm Management System (SFMS) to assist farm owners, field supervisors, and supply chain managers in monitoring agricultural activities digitally.

Each morning, the farm owner logs into the web dashboard to review crop growth status, irrigation schedules, fertilizer usage, and weather forecasts. The system displays real-time soil moisture data collected from IoT sensors installed across different fields. If moisture levels drop below a threshold, automated alerts are generated and irrigation is scheduled.

Field supervisors use a mobile app to update pest observations, upload crop images, and report equipment issues. The system stores historical yield data and generates analytics reports comparing seasonal productivity.

Meanwhile, supply chain managers track harvested crops, update warehouse inventory levels, and coordinate transportation schedules. The system automatically sends low-stock alerts and generates billing summaries for distributors.

The platform ensures data security, supports both Bangla and English languages, works in areas with weak internet connectivity, and maintains high system availability during peak harvesting seasons.

1	a	*Analyze the above scenario and **clarify** the functional and non-functional requirements of the Smart Farm Management System. Clearly explain how they contribute to system effectiveness and user satisfaction.*	[Marks: 4]	CLO-1 | Level-2
	b	*Develop the user profile of a Field Supervisor and **describe** how the system design supports smooth interaction for this user.*	[Marks: 3]	CLO-1 | Level-2
	c	*Identify and explain the relevant feasibility study types applicable to this Smart Farm Management System. **Discuss** how each selected feasibility type helps determine project viability and long-term sustainability.*	[Marks: 4]	CLO-1 | Level-2

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EduFlex, a fast-growing online learning platform, plans to redesign its system to improve student engagement and instructor productivity. The upgraded platform will introduce AI-based personalized course recommendations, live interactive classes, real-time quiz analytics, offline content download, and multilingual support.

The platform serves university students, working professionals, rural learners with unstable internet access, instructors, and academic administrators. Many rural learners have limited technical skills and use low-end smartphones.

EduFlex aims to collect accurate requirements from diverse stakeholders to ensure usability, scalability, and reliability of the redesigned system.

2	a	*Select and justify the most appropriate requirements elicitation techniques for gathering requirements for the EduFlex platform.* ***Explain*** *how each chosen technique effectively captures stakeholder needs.*	[Marks: 6]	CLO-2 | Level-2
	b	***Discuss*** *the limitations of at least two elicitation techniques that you did not select, explaining why they would be less suitable in this scenario.*	[Marks: 3]	CLO-2 | Level-2

Meena is the manager of a growing online grocery delivery service called QuickCart. Customers use the mobile application to create accounts, browse products, add items to a cart, apply discount coupons, and place orders.

The system supports secure login using password or OTP authentication. Customers can track order status in real time and receive delivery notifications.

Delivery agents log in to view assigned deliveries and update order status. Store managers manage inventory, update product prices, and view sales reports. System administrators monitor platform performance, manage user accounts, and generate business analytics reports.

The system must also allow customers to request refunds or report damaged products.

3	a	***Sketch*** *a Use Case Diagram for the QuickCart system. Include relevant actors and clearly represent their relationships.*	[Marks: 5]	CLO-3 | Level-3