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Daffodil International University

Department of Software Engineering
Faculty of Science & Information Technology
Midterm Examination, Summer 2025

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

Sections & Teachers: MTM(A), RHH(B, K), FRR(C), RMS(D-G), KBB(H-I), NML(J), SHN(L)

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.]

Dr. Sameera is a senior physician working at a multi-specialty hospital. The hospital recently adopted a digital Hospital Management System (HMS) to streamline its operations. One morning, she logs into the system using her secure credentials and views her daily appointments. The dashboard displays patient names, appointment times, symptoms, and assigned consultation rooms. She clicks on a patient profile, which opens the patient's medical history, lab reports, past prescriptions, and billing records. She adds notes, prescribes medicine, and schedules a follow-up. Meanwhile, the patient uses the mobile HMS app to receive updates on prescriptions, invoices, and future appointments. The pharmacy module processes the prescription and alerts the inventory manager to restock a low-supply medicine. Simultaneously, the lab technician receives a notification to perform a requested blood test. At the end of the day, the system generates analytics for the hospital administrator, showing patient flow, department efficiency, and billing summaries.The secure and integrated HMS enhances coordination among departments, reduces human error, and ensures fast service to patients while maintaining confidentiality and user-friendliness.

1.	***a)***	*Analyze the given scenario and **identify** the functional and non-functional requirements for the system, explaining how they support its intended functionalities and user experience.*	**[Marks-4]**	**CLO-1** *Level-2*
	b)	***Describe** the user profile of Dr. Sameera and illustrate her smooth interaction with the HMS.*	**[Marks-3]**	
	c)	*Read the following scenario and identify the relevant feasibility types involved. Then, **explain** how each selected feasibility study helps assess the success of the proposed airforce security maintenance software.*	**[Marks-4]**	
2.	***a)***	Rocket, a popular mobile financial service, is planning to redesign its transaction system to offer faster money transfers, biometric login, real-time fraud detection, and improved user experience for rural and urban users. The development team aims to collect detailed requirements from a wide range of users including agents, daily wage earners, and small shop owners. Since most users have limited technical knowledge, the company wants to ensure that their pain points and suggestions are clearly understood. The system must also ensure compatibility with low-end devices and unstable internet connections. User feedback will shape features such as transaction limit settings, language preferences, and offline notification support. ***Explain** appropriate elicitation techniques for the Rocket transaction*	**[Marks-6]**	**CLO-2** *Level-2*

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		system described in the scenario and justify your choice with a detailed explanation of how it will effectively gather the necessary requirements.		
	b)	***Discuss** the drawbacks of alternative elicitation techniques that you decided not to use during the requirement collection phase and explain why they were less suitable for the Rocket transaction system scenario.*	**[Marks-3]**	
3.	***a)***	Rahim, a small shop owner in a rural town, relies heavily on Rocket, a mobile financial service, to receive payments from customers and send money to his suppliers. Recently, Rocket announced that they are redesigning their transaction system to make services faster and more user-friendly for people like Rahim. The new system will allow users to log in using biometric authentication or a secure PIN, perform instant money transfers, check balances, and download transaction reports. To ensure transparency and safety, Rocket has integrated a real-time fraud detection feature that alerts users instantly in case of any suspicious activity. Rahim is especially excited about setting a daily transaction limit and choosing his local language in the app, making it more personal and easy to use. The company has also committed to supporting low-end smartphones and ensuring that the app works even in areas with poor internet connectivity. Meanwhile, Rocket agents continue assisting users with cash-in and cash-out services, and system admins monitor user activity and system health. Rahim feels confident that these improvements will make his business transactions more secure, reliable, and convenient.	**[Marks-5]**	**CLO-3** *Level-3*
		***Draw** a use case diagram for the Rocket transaction system. Include key actors like users, agents, and admins.*		

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