



Class/Section: - BSSE-4
Subject: - Software Requirement Engineering
Instructors: - Najmun Nisa

Marks: - 25
Time: - 90 minutes
Dated: - 28th October, 2025

- *All questions are self-explanatory and require no further explanations during exam time.*
 - *Return the question paper along with the answer sheet.*
 - *Attempt all questions.*
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(CLO – 1: Demonstrate software requirements engineering process using tools.)

Question#1:

(5+5=10)

You are leading a development team working with TransLogix Inc., a national transportation agency, to create an Intelligent Fleet Management System (IFMS). The system will monitor vehicles in real-time, schedule maintenance based on usage, track driver behavior, and optimize route planning. Stakeholders include operations managers, vehicle maintenance teams, drivers, and IT security experts. Early discussions reveal that different departments have conflicting expectations like operations want efficiency, while security emphasizes data protection, and drivers are concerned about privacy.

- a) Briefly describe the requirements of the engineering process your team should follow to gather, analyze, and manage the system requirements effectively for IFMS.
- b) Identify three common problem areas in the requirement engineering process that may arise in this scenario. For each, provide a short explanation of why it might arise in the context of this project.

(CLO – 2: (Apply appropriate requirements elicitation techniques to specify a set of software requirements for a medium sized software system))

Question#2:

(3+2= 5)

A municipal authority wants to introduce a Smart Waste Management System (SWMS) to automate waste collection, monitor bin status via sensors, track garbage trucks, and notify citizens about schedules or delays. The system will be used by city residents, waste collection drivers, route planners, sanitation supervisors, and IT administrators. The project aims to reduce costs, improve service delivery, and promote environmental awareness. As a business analyst, you are responsible for conducting the requirements elicitation phase.

- a) Describe how you would approach eliciting requirements from a diverse set of stakeholders, including both internal and external stakeholders.
- b) Choose two elicitation techniques that are most suitable for this project and explain how they would be applied.

(CLO – 3: Apply user requirements approaches to analyze system behavior and requirements)**Question#3:****(3+3+4= 10)**

The city's sanitation department is introducing CleanTrack, a smart solution to streamline citywide cleanliness. Citizens can use a mobile app to report garbage overflow, broken public bins, or missed waste pickups. Once a complaint is submitted, the system assigns it to the nearest cleaning crew, tracks task progress, and sends resolution updates to the complainant. Supervisors review completed tasks and flag delays or repeated complaints. The system integrates geolocation and supports image uploads.

Key Features:

- **Complaint Submission:** Residents submit waste-related complaints with photos and GPS data.
 - **Crew Assignment:** Tasks are routed to nearby available teams.
 - **Progress Tracking:** Users can view live complaint status.
 - **Supervisor Review:** Supervisors mark complaints as resolved or escalate for further action.
 - **Feedback Collection:** Users rate service quality post-resolution.
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- a) Consider the Crew Assignment feature.
Describe a normal flow, an alternative flow, and an exception flow using use case modeling for when a garbage complaint is assigned to a cleaning team.
 - b) Define three business rules that must be followed to ensure CleanTrack works as expected.
For each, specify: Rule ID, Rule Type, Rationale (why it is required).
 - c) Propose four non-functional requirements and indicate whether each requirement is related to internal or external quality attributes.

Best of Luck