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Daffodil International University

Faculty of Science & Information Technology

Department of Software Engineering

Midterm Examination, Fall 2026

Course Code: SE212

Course Title: Software Requirements Specification & Analysis

Sections & Teachers: A-N (NIR, KBB, TRT, SHN, JK)

Time: 1:30 Hrs **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.]

A company helps drivers when their vehicles break down on the road. At present, a driver calls the RoadRescue office and explains the problem and location. An office staff member then contacts nearby mechanics by phone until someone is available. The mechanic travels to the driver, carries out the repair, and later informs the office about the result. Drivers often call the office again while waiting because they do not know whether a mechanic has been assigned or how far away the mechanic is. Information about requests and completed jobs is currently kept using paper forms and spreadsheets.

The company wants to improve this process using a mobile and web-based system called **RoadRescue**. A driver who needs help should be able to provide the location of the breakdown and information about the vehicle problem. Office staff will need to review incoming requests and decide which available mechanic should handle each case. Mechanics should receive the necessary job information while travelling and keep RoadRescue informed about their progress. Drivers should also be able to know what is happening with their request without repeatedly calling the office. After the work is completed, RoadRescue wants customers to be able to pay electronically and share their opinion about the service. A mechanic may also need to provide evidence that the job has been completed.

RoadRescue plans to use an external Map Service for location and route information, an external Payment Service for electronic payments, and an external Message Service for sending important updates to customers.

One regular customer, **John**, is 46 years old and drives between different towns for his small business. He uses his smartphone daily for calls, messaging, maps, and mobile banking, but avoids applications with complicated menus. When his vehicle breaks down, he may be standing beside a busy road and wants to request help quickly without entering unnecessary information. Mobile internet is also weaker in some of the areas where he travels.

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Before development begins, RoadRescue is concerned about whether the available technology and internet connections can support the service reliably, whether the cost of developing and running the system will be reasonable for the company, and whether office staff and mechanics will be comfortable changing from their current phone-based way of working.

RoadRescue's customers are located in many different places. Mechanics spend most of their working day travelling and working at different times. Office staff are easier to reach, but some of the steps they follow when handling urgent breakdowns are based on experience and are not written in the existing forms or spreadsheets.

1.	a)	**Classify** the relevant stakeholders of the proposed RoadRescue system.	[Marks-1]	CLO-2 Level-2
	b)	Based on the given scenario, select the suitable requirements elicitation technique(s) with each stakeholder group and **explain** your selection.	[Marks-4]	
	c)	Based on the given scenario, **articulate** the functional requirements of the proposed RoadRescue system.	[Marks-4]	
2.	a)	Analyze the given scenario and **express** the relevant non-functional requirements of the proposed RoadRescue system.	[Marks-2]	CLO-1 Level-2
	b)	**Describe** the user profile of John and **infer** the corresponding implied requirements/needs.	[Marks-5]	
	c)	**Infer** the relevant feasibility assessment involved for the proposed RoadRescue system and explain why they are necessary before implementation begins.	[Marks-4]	
3.	a)	**Draw** a Use Case Diagram for the proposed RoadRescue system based on the functional requirements you articulated in question 1(c). Include key actors and their associations with the system.	[Marks-5]	CLO-3 Level-3