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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science and Engineering
Midterm Examination, Summer 2026
Course Code: CSE 315, Course Title: Software Engineering
Level: 3 Term: 1

Time: 1:5 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.]***

The **Smart E-Commerce & Live Shopping Platform** is a cloud-based digital commerce system designed to enhance online shopping experiences using Artificial Intelligence (AI), live-streaming technology, and cloud integration. The platform allows sellers to showcase products through live shopping sessions, where customers can watch product demonstrations, communicate through live chat, ask questions, and purchase products instantly.

The system provides AI-powered personalized product recommendations, smart search, automated inventory management, secure digital payment integration, and order tracking. Customers can browse products, participate in live sales events, manage wishlists, submit product reviews, and receive discount notifications based on shopping behavior. Sellers can access dashboards to monitor sales performance, customer engagement, inventory levels, and promotional campaign effectiveness.

Delivery partners can update shipment status using GPS tracking, while third-party vendors such as logistics companies and payment gateways can securely access services through APIs. The platform ensures data security, fraud detection, high scalability, multi-user access, and system reliability during large-scale promotional campaigns. As the platform combines AI, cloud services, real-time communication, and multiple stakeholder interactions, effective risk management and the gradual enhancement of system functionalities are essential to meet evolving business needs and ensure long-term reliability.

1.	(a) Explain which software process model would be most suitable for developing this system considering its scale, stakeholder involvement, and risk management requirements. Justify your choice.	[3]	CO1
	(b) Based on the above system, classify and differentiate its functional and non-functional requirements.	[3]	
2.	Construct a Use Case Diagram for the Smart E-Commerce & Live Shopping Platform. Clearly incorporate appropriate UML relationships, including association, generalization, «include», and «extend», wherever applicable.	[8]	CO2
3.	Describe the detailed use case specifications for the following use cases from the Smart E-Commerce & Live Shopping Platform: • Participate in Live Shopping Session • Place Order and Make Payment	[5]	CO1
4.	(a) Construct an Activity Diagram illustrating the process of purchasing a product through a live shopping session.	[3]	CO2
	(b) Draw a Sequence Diagram showing how the system generates and provides AI-powered personalized product recommendations to a customer.	[3]	