



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 <u>Smart E-Commerce & Live Shopping Platform</u> is a cloud-based digital commerce system designed to enhance online shopping experiences using <u>Artificial Intelligence (AI)</u>, <u>live-streaming technology</u>, and <u>cloud integration</u>. The platform allows <u>sellers</u> to showcase products through <u>live shopping sessions</u>, where <u>customers</u> can watch <u>product demonstrations</u>, <u>communicate through live chat</u>, <u>ask questions</u>, and <u>purchase products instantly</u>. The system provides <u>AI-powered</u>, <u>personalized product recommendations</u>, <u>smart search</u>, <u>automated inventory management</u>, <u>secure digital payment integration</u>, and <u>order tracking</u>. <u>Customers</u> can browse products, participate in <u>live sales events</u>, <u>manage wishlists</u>, <u>submit product reviews</u>, and receive <u>discount notifications</u> based on <u>shopping behavior</u>. <u>Sellers</u> can access <u>dashboards</u> to monitor <u>sales performance</u>, <u>customer engagement</u>, <u>inventory levels</u>, and <u>promotional campaign effectiveness</u>. <u>Delivery partners</u> can update shipment status using <u>GPS tracking</u>, while <u>third-party vendors</u> such as <u>logistics companies</u> and <u>payment gateways</u> can securely access services through <u>APIs</u>. The platform ensures <u>data security</u>, <u>fraud detection</u>, <u>high scalability</u>, <u>multi-user access</u>, and <u>system reliability</u> during large-scale promotional campaigns. As the platform combines <u>AI</u>, <u>cloud services</u>, <u>real-time communication</u>, and <u>multiple stakeholder interactions</u>, <u>effective risk management</u> and the <u>gradual enhancement of system functionalities</u> are essential to meet evolving business needs and ensure <u>long-term reliability</u>.			
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]	CO1
	(b) Draw a Sequence Diagram showing how the system generates and provides AI-powered personalized product recommendations to a customer.	[3]	