



# United International University (UIU)

## Dept. of Computer Science & Engineering (CSE)

Mid Term Exam Trimester: Fall 2024 Marks: 30 Time: 1 hr 30 mins

Code: CSE 3411 Course Title: System Analysis & Design

**“Any examinee found adopting unfair means will be expelled from the trimester/program as per UIU disciplinary rules.”**

### **Answer the following questions:**

1. Consider the following scenario and write down the answers to the questions mentioned as follows:

Bengal books is a very famous bookstore in Bangladesh. Recently they have developed an online bookstore named **BookBliss**. When a potential customer visits this online bookstore's website. They can browse through various categories like fiction, non-fiction, and textbooks. After selecting desired books, users have to log in to their respective accounts to add the selected books to their shopping cart. During checkout, shipping and billing information is automatically extracted from the **Customers** table, but the user has the option to choose a different shipping address if they want to. Then they have to choose a payment method.

The system processes the payment using a third-party payment gateway. Once the payment is successful, an order is generated and stored in the **Orders** table, which contains information about each order, including the customer ID, order date, total amount, and shipping address. The system updates the **Inventory** table, which tracks the quantity of each book in stock, to reflect the reduced quantity of the purchased books.

An administrator reviews the order and generates a shipping label. The order, along with the shipping label, is assigned to a delivery person. The delivery person picks up the order from a Bengal books warehouse and delivers it to the customer's address.

**[CO3]**

- a. Identify the primary actors and the main use cases. Then draw the use case diagram, illustrate at least one **include** relationship and one **extend** relationship. Explain your rationale for choosing these specific relationships. **[3]**
- b. Write down the descriptive form of the **“Purchase Books”** use case shown in the use case diagram for the above scenario. **[3]**
- c. Draw the DFD, showing the processes, data stores, and data flows. (Some processes and data stores may not have been mentioned explicitly.) **[3]**
- d. Draw the swimlane diagram for the above scenario. **[3]**

2. Consider the online bookstore scenario was in its initial stage before launch: [CO2]
- Which information gathering **tool** would be most beneficial for the system? [1]
  - Identify the major **sources of information**, discuss the advantages and disadvantages of one major **tool** that has been selected in 2(a), and outline the expected outcome of the information-gathering process. [2+2]
3. Answer the following questions: [CO1]
- Differentiate between the following types of software systems: ERP, MIS. [2]
  - Mention some major activities of the following SDLC steps: Analysis, Deployment. [2]
4. Suppose you want to launch a new software to the market. Your financial forecasting team informs you that the business will require an initial investment of \$7000, followed by additional investments of \$4000 and \$3000 after years 3 and 5 respectively. In return, they expect it to earn \$1000, \$2600, \$3000, and \$6000 after 2, 3, 4, and 5 years respectively.  
If the inflation rate is at 10%, How much revenue does the business need in its sixth year to have a 5% return on investment? Find out the profit/loss status through Cash Flow Method. [4]  
[CO4]
5. Develop and present in the class room on a **partial** SRS document (software requirement specification) as a group wise project assigned in the classroom. The SRS document should cover the following areas regarding your respective project: Introduction, Rationale/purposes of the project, Detail system study (tentatively you should cover benchmark products, research papers, onsite visit, survey, online sources etc.), feasibility analysis (SWOT analysis, cash flow analysis etc.), system design (Use case diagram, use case descriptive form, Data Flow Diagram, activity diagram, swimlane diagram etc.)  
(Do not answer this question in the examination) [CO3]  
[5]