United International University (UIU)
Dept. of Computer Science & Engineering (CSE)
Mid Term Exam Trimester: Spring 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:
   CityGuide Plus is a comprehensive urban exploration platform designed to assist both locals and tourists in discovering and navigating through the city's attractions. The website offers features such as personalized itineraries, restaurant recommendations, and real-time event updates.
   Users can create accounts to access enhanced features and tailor their experiences based on preferences. The system retrieves user data from the USER file for authentication during login. Once logged in, users can explore the city's attractions by searching for specific places or browsing categories. The system accesses the LOCATION database to provide accurate and up-to-date information on various points of interest. Users can customize their itineraries, add favorite spots, and receive notifications about ongoing events.
   If a user decides to attend an event, the system facilitates event ticket booking through integration with a third-party ticketing service. The booking process updates the EVENT_TICKET database and sends a confirmation receipt with payment details. Users are directed to complete the payment through the designated channels. In case of non-payment within the specified timeframe, the booking is automatically canceled. The platform enhances the city exploration experience, promoting engagement and convenience for users seeking a dynamic urban adventure.

   [CO3]
   a. Draw the DFD for the above scenario. **[4]**
   b. Draw the Use case diagram for the above scenario (show at least one extend/include relationship in the diagram). **[4]**
   c. Write down the descriptive form of one major use case shown in the use case diagram for the above scenario. **[4]**

2. Considering the above-described scenario was in its initial stage before launch. Briefly explain any **one tool** of information gathering that would be most beneficial in gathering the information needed to make this project. Mention the **sources of information**, the merits and demerits of the **tool you chose**, and the expected outcome of the information gathering process. **[CO2]** **[1+2+2 = 5]**

3. Answer the following questions:

   [CO1]

   a. Mention key features of the following types of software systems: MIS, ES. **[2]**
   b. Briefly outline the steps of the Prototyping SDLC model using a diagram.   **[3]**

4. You are considering an investment opportunity for a new business venture that requires an initial investment of $8000, followed by additional investments of $3000 and $5000 after 2 and 4 years, respectively. In return, you expect to earn $1200, $2500, $4000, and $7000 after 2, 3, 4, and 5 years, respectively. The rate of interest for this venture is set at 8% per year.
   Find out Profit/Loss through Cash Flow Method.   **[3]**
   [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 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]