



Department of Computing and Information System

Final Examination: Fall Semester-2025

Program: B.Sc. in CIS

Course Code: CIS 323

Course Title: Information System Analysis and Planning

Time: 2 Hours

Total Marks: 40

(Answer all the followings questions)

A banking system needs to manage different types of accounts: <u>SavingsAccount</u>, <u>CurrentAccount</u>, and <u>FixedDepositAccount</u>. All accounts have <u>common attributes</u> like <u>accountNumber</u>, <u>accountHolder</u>, and <u>balance</u>. However, <u>interest calculation and withdrawal rules differ</u>. <u>SavingsAccount</u> provides 4% interest with limited withdrawals, <u>CurrentAccount</u> has no interest but allows unlimited withdrawals, and <u>FixedDepositAccount</u> provides 7% interest with no withdrawals before maturity.			
1	a)	Explain "Software crisis" with respect to stack holder of software development team. give example .	[5] CLO-1 L1,L5
	b)	Identify OOAD principles in the current design. Specifically point out of High Cohesion, and Low Coupling principles	[5] CLO-1 L2
2	a)	Explain NLA for defining class, object, Attribute, methods with example for given banking system.	[5] CLO-2 L5,L1
	b)	How do you manage different types of accounts through Inheritance and polymorphism.	[5]
3	An online hotel reservation system allows customers to search for <u>hotels</u>, view room details, make reservations, and cancel bookings. The system interacts with <u>PaymentGateway</u> for <u>payments</u> and sends <u>confirmation emails</u>. Hotel administrators can update room availability and prices. Reservations can be modified before <u>check-in date</u>.		
	a)	Draw a class diagram for online hotel reservation system	[5] CLO-3
	b)	What is a design pattern? Name two main benefits of using design patterns in software development.	[3] CLO-4 L1
	c)	Briefly explain how the Factory Pattern works and give an example scenario where it is particularly useful.	[2] CLO-4 L3
4	hotel reservation system adopted Spring Boot as part of its digital transformation to modernize its retail platform and support modular, scalable development. Based on this context, answer the following: i) Provide a sample application.properties configuration, including: Server port, Database URL, username, password JPA		[10] CLO-3 L6

		& Hibernate settings		
	ii)	Define model for orders model.(Ordersno,date ,customerneme product name,quantity,price)		
	iii)	Define a controller used for a key module (Orders) and explain the use of relevant annotations such as Controller, @GetMapping, @PostMapping, @Autowired		
	iv)	Create a basic Repository interface using Spring Data JPA.		
	v)	Define the Service layer, including how it connects Controller and Repository		