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Daffodil International University

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: SavingsAccount, CurrentAccount, and FixedDepositAccount. All accounts have common attributes like accountNumber, accountHolder, and balance. However, interest calculation and withdrawal rules differ. SavingsAccount provides 4% interest with limited withdrawals, CurrentAccount has no interest but allows unlimited withdrawals, and FixedDepositAccount 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 hotels, view room details, make reservations, and cancel bookings. The system interacts with PaymentGateway for payments and sends confirmation emails. Hotel administrators can update room availability and prices. Reservations can be modified before check-in date.*			
	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]	CL0-4 L1
	c)	Briefly explain how the **Factory Pattern** works and give an example scenario where it is particularly useful.	[2]	CL0-4 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*

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			& 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		

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