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Department of Computing and Information System
Final Examination: Spring Semester-2025
Program: B.Sc. in CIS
Course Code: CIS 414
Course Title: Information System Management

Time: 2 Hours **Total Marks: 40**

(Read carefully Answer all the followings questions)

Scenario: DSS Implementation in a Retail Chain (SmartMart Ltd.)

Company Background: SmartMart Ltd. is a fast-growing retail chain operating across multiple cities. The company sells a wide range of consumer products and groceries, both online and in-store. Recently, it faced challenges related to inventory management, customer satisfaction, and pricing strategies due to rapid expansion and increasing market competition.

To overcome these challenges, SmartMart decided to implement a Decision Support System (DSS) integrated into their Enterprise Resource Planning (ERP) system. The goal is to improve decision-making across departments—inventory, marketing, finance, and customer service—by providing timely, data-driven insights.

No		Questions	Marks	*CLO/PLO*
1.	*a*	You can define DSS and say how SmartMart uses it to analyze historical sales data and forecast demand.	[4]	CLO-1 *Level-1.5*
	b	Compare DSS with MIS by explaining how MIS provides routine sales reports while DSS allows complex analysis like predicting stockouts or testing discount strategies.	[2]	CLO-1 *Level-4.6*
	c	Show how management science techniques (like optimization or forecasting models) help SmartMart design effective DSS dashboards for supply chain and logistics.	[2]	CLO-1 *Level-4.6*
2.	*a*	Describe the DSS components (Database, Model Base, User Interface, etc.) with reference to SmartMart's system.	[3]	CLO-2 *Level—5.1*
	b	Main players: Inventory Managers, Marketing Analysts, IT Support, and Executives—all using DSS to make different types of decisions.	.[3]	
	c	Discuss how communication between marketing analysts and inventory teams via DSS improves product stocking and promotional planning.	[2]	CLO-2 *Level-5*
3.	*a*	Explain the role of predictive modeling in a DSS. Provide a specific example of how SmartMart could use a demand forecasting model to predict which products will experience high demand during the upcoming Eid season.	[4]	CLO-3 *Level-5*
	b	Describe the following two analysis techniques and how SmartMart could use them to improve decision-making: How could SmartMart simulate the impact of a 15% discount on home appliances and how might SmartMart analyze the relationship between monthly digital ad spending and online sales volume?	[4]	CLO-3 *Level-5*
4.	*a*	Explain expert systems using SmartMart's customer service bot, which gives advice based on previous return policies (rules). A knowledge-based system, on the other hand, might continuously learn from new feedback.	[4]	CLO-4 *Level-6*
	b	***Knowledge acquisition:*** Collecting sales trends, customer feedback, and staff expertise to improve the recommendation engine.	[4]	

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5.	*a*	*Identify* and explain two decision support technologies that SmartMart uses to enhance its data-driven decision-making. ***Provide examples of:*** OLAP (Online Analytical Processing) for generating multidimensional sales reports. Data Mining Tools for discovering buying patterns and customer preferences.	[4]	CLO-5 *Level-3,2*
	b	Compare the different types of Management Information Systems (MIS) at SmartMart. Provide examples of how each type serves a unique function in the company: TPS (Transaction Processing Systems): Captures daily sales and transaction data. DSS (Decision Support System): Analyzes data to help decide which products to promote and plan strategies. EIS (Executive Information System): Provides high-level summaries and key performance indicators (KPIs) to senior management for strategic decision-making.	[4]	

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