

Code No: MB1941/19

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY- GURAJADA VIZIANAGARAM

MBA IV Semester Regular & Supplementary Examinations, May-2025

Supply Chain Management and Analytics

Time: 3 Hours

Max. Marks: 75

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*Answer any FIVE Questions One Question From Each Unit*

*All Questions Carry Equal Marks*

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**UNIT-I**

1. a Discuss the different views of supply chains with examples. 6M
- b How can organizations achieve strategic fit in a dynamic environment? 6M

**OR**

2. a Discuss how supply chain design impacts cost and service levels. 6M
- b Explain how companies can gain competitive advantage through SCM. 6M

**UNIT-II**

3. a What is demand planning? Describe its role in supply chain success. 6M
- b Analyze the impact of coordination and integration on supply chain performance. 6M

**OR**

4. a Explain the key differences between strategic and tactical planning in SCM. 6M
- b Describe the role of logistics in planning and execution. 6M

**UNIT-III**

5. a Discuss the Travelling Salesman Problem (TSP) and its significance in routing. 6M
- b Compare exact algorithms and heuristics in solving SCM problems. 6M

**OR**

6. a How can TSP solutions improve last-mile delivery? 6M
- b Illustrate how supply chain constraints can be optimized using linear programming. 6M

**UNIT-IV**

7. a Compare traditional decision-making techniques with fuzzy-based approaches in SCM. 6M
- b Describe the features of benchmarking in supply chain performance. 6M

**OR**

8. a How does digital transformation affect supply chain competitiveness? 6M
- b Explain how sustainability can be incorporated into modern supply chain strategies. 6M

**UNIT-V**

9. a Describe different types of inventory and their role in the supply chain. 6M
- b What are the factors affecting location decisions in supply chain design? 6M

**OR**

10. a Explain the phases of supply chain implementation in a large organization. 6M
- b Compare sector-specific SCM practices across different industries. 6M

**CASE STUDY**

- 11 PCS is a retail chain that operates in around twenty locations throughout the country of India. In order to keep the lead time and distance between the warehouse and the outlet as low as possible, the majority of the chain's warehouses are located in close proximity to the places where the stores located. The retail market in India is dominated by the chain to a significant degree. As of late, however, the company has seen a decline in the number of clients who are interested in purchasing its products. Customers praised the new fall collection that the business introduced throughout the autumn season. The collection was a huge success. In light of this, the chain predicted that there would be an increase in demand for the next month, 15M

and as a result, merchandise was kept in various warehouses in accordance with the anticipated demand.

Some of the chain's shops were positioned in the central marketplaces of cities, while others were found on the outskirts of the cities. The level of demand for things was very variable depending on the area. Some of the chain's outlets were unable to keep up with the significant rise in demand for the new collection, and as a result, they ran out of stock. As a result of the out-of-stock scenario, clients were very unsatisfied since they were unable to take advantage of seasonal discounts that were especially appealing to them. The image of the business was severely damaged as a result of this scenario, particularly among the consumers.

The owner of the chain wanted to discover the explanation for such a declining image of the chain and select steps to take in light of the ongoing predicament the chain is now experiencing. Following an exhaustive investigation, it was determined that the supply chain system of the chain included a gaping hole on account of the flaw. Particularly in areas where demand was unpredictable, the majority of the chain's outlets were unable to have an adequate amount of safety merchandise on hand. This resulted in these shops having a scenario where they were out of supply.

### **Discussion Questions**

1. Suggest measures for overcoming the stock out situation of PCS's stores.
2. Do you think raising the level of safety inventory can be a costly affair for PCS?