



JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA
PGDM / PGDM (M) / PGDM (SM)
IV TRIMESTER (Batch 2022-24)
END TERM EXAMINATION, October 2023
SET-1

Course Name	Supply Chain Management	Course Code	20522
Max. Time	2 hours	Max. Marks	40 MM

INSTRUCTIONS:

- Attempt all questions.
- Distribution of marks for each question mentioned in the bracket.
- It is an open book / notes examination. However, no mobile/ electronic / digital medium is allowed. Only calculators are allowed.
- Answers should be rich in content, precise and to the point.

Treefab Decor, is a furniture manufacturer that produces more than 100 stock keeping units (SKUs) of dining sets, sofas, modular kitchen assemblies, etc. It has been one of the leading brands of African subcontinent in the field of home décor. At present, the entire manufacturing and assembly is carried out in one of the ten manufacturing facilities of Treefab. From manufacturing plants, the complete product units are transported to its hundreds of distributors who also acts as a one stop solution to customers. Customers can either order online and pick up the ordered products from the distributor's warehouse. Otherwise, the customers can also walk into the distributor warehouse for selection and purchase. As a value-added service, distributors also deliver the purchased goods to customer premises on payment basis.

Of late, Treefab has observed a significant change in relation to the customer preferences that is resulting in excess inventories at various manufacturing facilities. Not only this, many a times it has also been found that the products which are high in demand could not be available at the distributorship for as long as 12 weeks. Recently, **Jacob** a distributor of Treefab expressed his

dissatisfaction to company's sales executive **Mike** that "Everybody wants to make more profits and this is the reason why I am also a distributor of Treefab; however, for a good enough time I have been tired of listening to your arguments that company cannot provide products if it is not ordered 4 weeks in advance; I do not understand this logic, not only this whenever I am left with unsold inventories then your team press me to offer discounts for clearing the inventories instead of taking them back. I think clearing inventories at manufacturing facilities is the main reason that company also gives us discount on some of the SKUs and motivate us to buy them in large quantities". Moreover, let me share with you, last year I had a monthly requirement of 1000 dining table sets at a cost of \$400 per set with an annual holding cost of 20%, a fixed transportation, logistics, loading-unloading cost of \$500 whenever the order was placed. Since, I was motivated with discounting scheme on larger buying of some of the SKUs; therefore, to reduce my cost of transportation and for earning high profits I purchased on an average 450 sets per order. Now, looking at the large unsold inventories I find it otherwise, that is, blocking of my warehouse and capital both. Jacob explains further that one of his friend **Nick** who is a distributor of **Homeshown** brand shared with him that their company advises to reduce cost with a different approach. Nick told that in his city there are three distributors of Homeshown including him and all of them have a different monthly product demand such as 2500 sofa sets by A, 1500 dining sets by B, and 2000 kitchen assemblies by C. In this type of ordering an overall fixed transportation cost of \$500 and a separate specific cost of \$60 is incurred for each distributor. Nick comments further that this scheme helps distributors in reducing costs by using full truck load capacity and allowing distributors in keeping their inventory levels as low as a JIT system keeps". With these inputs from Jacob, Mike reports back to the headquarters for seeking a timely solution.

Hence, considering yourself as a supply chain consultant for Treefab Décor, kindly help the company to address the following issues:

1a). Draw the current distribution network of Treefab and describe the pros and cons of this Distribution strategy in terms of overall supply chain costs & customer satisfaction. (5 Marks)

1b). Examining the Treefab's supply chain, give your recommendations to redesign it with different supply chain and distribution strategy, innovations and interventions (which may help Treefab to reduce supply chain costs and better meet customer preferences). (7 Marks)

1c). Recommend some best practices which Treefab can employ for improving the coordination among various entities in its supply chain. (5 Marks)

2a). With reference to Treefab's distributor- Jacob, what should be his economic ordering quantity and ordering frequency to minimize total supply chain costs. Ignore the lead time to answer the same. Critique the decision of Jacob to increase order size to 450. Explain the benefits of Nick's ordering policy over Jacob's replenishment policy. (10 Marks)

2b). Evaluate the optimal ordering frequency, optimal order quantities, and total cost of inventory for Nick's replenishment policy if cost of Sofa, dining set, and kitchen assemblies are \$100, \$200, and \$500 respectively. (7 Marks)

3). Propose and discuss some new technologies which may be employed in Treefab's supply chain to reduce supply chain costs, enhance overall profitability and customer satisfaction. (6 Marks)

