



**Maharashtra Education Society's
Institute of Management & Career Courses, Pune (Autonomous)
End Term Question Paper
AY 2025-26**



Course Code: SC-BA-04

Semester: III

Course Name: Supply and Operation Chain Analytics

Total Marks: 50

Time: 2 Hours and 30 Minutes

Instructions:

- i. **Attempt all questions.**

Question No. 1:

[10 Marks]

Situation: A retail electronics trading company reviews its annual sales data for the past 3 years and finds certain trends (spikes) which are appearing regularly at specific intervals.

Task: Study the situation and prepare Action plan for the management as way forward for achieving its Sales target for next year by using Descriptive, Diagnostic, Predictive and Prescriptive Analytics techniques.

Question No. 2:

[10 Marks]

Instructions:

Please read the below given case study and answer the questions suitably.



JOHN DEERE

Deere & Company

Deere & Company (brand name John Deere) is famous for the manufacture and supply of machinery used in agriculture, construction, and forestry, as well as diesel engines and lawn care equipment. In 2014, Deere & Company was listed 80th in the Fortune 500 America's ranking and was 307th in the 2013 Fortune Global 500 ranking.

Supply Chain Cost Reduction Challenges: Deere and Company has a diverse product range, which includes a mix of heavy machinery for the consumer market, and industrial equipment, which is made to order. Retail activity is extremely seasonal, with the majority of sales occurring between March and July. The company was replenishing dealers' inventory weekly, using direct shipment and cross-docking operations from source warehouses located near Deere & Company's manufacturing facilities. This operation was proving too costly and too slow, so the company launched an initiative to achieve a 10% supply chain cost reduction within four years.

The Path to Cost Reduction: The company undertook a supply chain network-redesign program, resulting in the commissioning of intermediate "merge centers" and optimization of cross-dock terminal locations.

Deere & Company also began consolidating shipments and using break-bulk terminals during the seasonal peak. The company also increased its use of third-party logistics providers and effectively created a network that could be optimized tactically at any given point in time.

Supply Chain Cost Management Results: Deere & Company's supply chain cost-management achievements included an inventory decrease of \$1 billion, a significant reduction in customer delivery lead times (from ten days to five or less) and annual transportation cost savings of around 5%.

Q. 1: Evaluate the main challenges before the company and state if the method in which they were being handled was correct?

Q. 2: Justify the actions in your own way, taken by the company to overcome those challenges and achieve its goal? Support any of the significant achievements?

Question No. 3: Solve any Two of below (15 marks each)

[30 Marks]

A). Scenario: A key supplier fails to deliver raw materials on time to a manufacturing unit of a garment industry.

Task: i). Quickly assess the impact on production,

ii). Identify alternative sources and predict the time it will take to regularise the production, and

iii). Make required communication with the team so as not to lose sales due to such disruption?

B). Situation: An online retail store, "ZARA" involved in selling clothing decides to outsource certain activities of its distribution aspect due to increased volume.

Task: Create an appropriate model using 3PL/4PL /5PL concept based on its supply chain analytics and justify your answer as to which all Supply Chain related activities should be outsourced and why?

C). Situation: Amazon - a multinational retailer sources products of different brands from various factories located different countries, and distributes them to hundreds of stores worldwide. The company faces a complex, ever-changing volatile market which is prone to geopolitical risks, fluctuating cost of operations, and ever shifting consumer demand leading to stockouts / unsold products, exorbitant transportation costs and risk of unstable customer base.

Task: Using principles of Network Design and Supply Chain Analytics suggest a solution to Optimize existing its existing global retail supply chain so as to derive the benefits of stability and sustainability for the company for a long-term tenure in the competitive market.
