JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

PGDM / PGDM (M) / PGDM (SM)

FOURTH TRIMESTER (Batch 2024-26)

END TERM EXAMINATIONS, OCTOBER 2025

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 closed book / notes exam, no mobile/ electronic / digital medium is allowed. Only calculators are allowed.
- Answers should be rich in content, precise and to the point.

Q1)

Epson produces printers in its Taiwan factory for sale in Europe. The European market consists of six countries mentioned in the Table below. Printers sold in different European countries differ in terms of the power supply outlet (which is dissimilar in various countries) as well as language of manuals. Currently, Epson assembles, adds power outlet and packs printers (for sale in individual countries) at the Taiwan factory before shipping them to individual countries. The distribution of weekly demand in different countries is normally distributed, with means and standard deviations as shown in the Table. Assume demand in different countries to be independent. Epson targets a CSL of 95 percent i.e. NORM.INV (0.95,0,1) = Safety Factor (K) = 1.65. The lead time from the Taiwan factory to each of the European country is *exactly* eight weeks. The average cost of printer is \$ 600 and holding rate is 30%.

a) **With reference to above, determine how much overall safety inventory does Epson require in Europe at the DC for the whole European market. Also evaluate the annual safety inventory carrying cost incurred at DC.**

The management at Epson is contemplating building a central DC in Europe. Epson will ship base printers (without power supply and manuals) to the DC. When an order is received, the DC will assemble power supplies, add manuals, and ship the printers to the appropriate country. In this scenario also, the base printers will be manufactured in Taiwan and delivered to DC with a lead time of *exactly* eight weeks.

b) **Analyse and determine the expected savings in safety inventory of base printers at DC** *(before outbound shipment from DC)* **and the resulting annual safety inventory carrying cost as compared to the previous one.** *The holding rate and average cost of printer is same as before.*

Country - Market	Mean Demand Standard Deviation	
	Mean Demand	*Standard Deviation*
France	3000	2000
Germany	4000	2200
Spain	2000	1400
Italy	2500	1600
Portugal	1000	800
UK	4000	2400

Marks (5+5)

Q2)

"New India Medhtech" is North India distributor of medical equipment and accessories based in Delhi. The manufacturer of medical equipment and accessories is based in Chennai. "New India Medhtech" deals with four category of products i.e. P-I, P-II, P-III & P-IV.

Products P-I and P-II are high demand products but of relatively lower value as well as lower demand uncertainty than other two products. Products P-III & P-IV are high value products with high demand uncertainty but the demand of these products is lower as compared to P-I & P-II.

The management of "New India Medhtech" is concerned about high inventory related costs at their Distribution Centre in Delhi. Presently, all four products are managed separately by different product managers, ordered separately and transported separately by truck from Chennai to Delhi. Air freight is another available option with "New India Medhtech" for transporting goods from Chennai to Delhi.
Supply Chain Manager at "New India Medhtech" is reviewing some of the supply chain decisions related to ordering and mode of transportation.

a) Which of the four products are best suited to be transported by Road and which by Air from Chennai to Delhi.?
b) What other decision related to ordering, the Supply Chain Manager can take to reduce Inventory related costs at their Distribution Centre.

Analyse and provide suitable reasons for your recommendations for the each of the above? *(Note: Analyse in terms of product characteristics i.e product value, demand volume, demand uncertainty etc and various supply costs involved)*

Marks (5+5)

Q3)

Explain the effect and problems which results if each stage of a supply chain views its demand as the orders placed by the downstream stage? Discuss the managerial levers to mitigate such undesirable effect / problems and facilitate better coordination in the supply chain?

Marks (6)

Q4)

Taking one appropriate example of a supply chain from business environment, discuss how a Responsive Supply chain differs from an Efficient Supply Chain? With reference to the examples considered, compare the role of three logistical drivers between the two.

Marks (6)

Q5)

IKEA vs Pepperfry

IKEA is the Swedish furniture retailer which provides stylish, affordable and well-designed products & solutions to its customers. IKEA is known for its signature "warehouse style" retail stores. In India, IKEA currently operates it's signature large-format "warehouse-style" stores in select cities like Mumbai, Bengaluru, and Hyderabad.

IKEA's upstream supply chain consists of a network of distribution centres, dedicated manufacturing facilities, raw material suppliers and various other service providers. Stores place replenishment orders on manufacturing facilities which are typically located in low cost countries. Economic modes of transportation are used to make deliveries to the large warehouse style retail stores. Further, IKEA uses modular design for its ready-to-assemble particle wood furniture. With its various supply chain strategic decisions, IKEA is able to provide good product variety, product availability at a reasonable cost.

Pepperfry also operates chain of retail outlets or studios which offers a wide range of ready to assemble, modular and thoughtfully designed furniture for various needs, including living rooms, bedrooms, offices, and kitchens. Presently, Pepperfry has over 200 *small retail stores* or studios across more than 100 Indian cities.

The specific retail store size of a Pepperfry franchise stores can vary by location and franchisee requirements, however in general these stores require a space ranging from approximately 400 to 1200 square feet. This is *much smaller* than the massive, warehouse-style stores of IKEA having store size of about 400,000 sq. ft.

The competitive strategy of both IKEA and Pepperfry is to provide stylish ready to assemble furniture at a reasonable cost.

Discuss and compare (between Pepperfry & IKEA) the role played by different stages of the supply chain in achieving good strategic fit between their competitive strategy and supply chain strategy.

Marks (8)