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Roll

National Institute Of Technology, Hamirpur (HP)

Name of the Examination: End Semester M.Tech

Branch :MBA

Semester :III

Course Name Logistics and Supply Chain

Course Code: MB 734

Time: Three hours

Maximum Marks: 50

Note: Assume any missing data suitably. Supplement your answers with figures/tables, wherever possible. Answers should be to the point and brief.

PART A

Q1. (a) What are the different models of inventory used by warehouses to effectively stock the goods. ? Name some storage policies used for location assignment in warehouses.

(b) John Pritchard buys stationery for Penwynn Motors. The demand for printed forms is constant at 20 boxes a month. Each box of forms costs 50\$, the cost of processing an order and arranging delivery is 60\$, and holding cost is 18\$ a box a year.

What are the economic order quantity, cycle length and costs?

Q2. (a) Choosing the right transportation system for your freight transportation needs is part and parcel of every purchase order process. Freight involves bulk shipping, where products are bundled together in large quantities and sent out usually to retailers or wholesalers. Bulk shipping is a whole different ball game from customer fulfillment, and each delivery method comes with its own set of pros and cons. So how would you know whether to choose between sea, land or air freight transportation services?

(b) What do you mean by a 3PL in logistics? Provide a framework for transforming a small logistics company into a comprehensive 3PL company. [Hint: Identify some dimensions the framework must consist of and lists some of the major underlying activities in each dimension and their corresponding strategies or techniques and technologies.]

Q3.(a) What are the major processes in The Supply Chain Operations Reference (SCOR) Model developed by Supply Chain Council? Also, provide SCOR based supply chain performance metrics.

(b) Provide figures for (i) Number of facilities versus response time (ii) Inventory costs versus number of facilities (iii) Cycle view of supply chain (iv) Push- Pull boundary (v) Bullwhip effect.

Q4. Over more than 40 years, Apple Inc. has evolved from a small, garage-based computer manufacturing firm into a technology giant and trendsetter. Known around the world for its sleek, modern designs and cutting-edge products, Apple has remained at the forefront of its industry for years.

The company maintains extremely strict standards for its numerous suppliers. The top 200 suppliers in this list make up 98% of the business's procurement. Apple acquires components and materials from their suppliers, and then ships them to the outsourced assembly plant in China. The manufactured products are shipped from China directly to the consumers who order them online (drop shipping) by using the services of third-party shippers such as FedEx or UPS. They can also be shipped to the central warehouse location in California. The products are distributed from the central warehouse location to retail stores, wholesalers and network carriers. Such simplified supply chain management has brought Apple much success. One of company's secrets is that it treats its hardware products – MacBooks, iPads and iPhones – as perishable inventory with expiration date.

An excellent example of a successful reverse logistics system is Apple. Apple manufactures iPhones and other electronic products, which are sold in various stores around the world. Consumers purchase the iPhone and accessories, enjoying their personal devices until they cease functioning or are replaced by an upgrade. Customers who return to the store for a new device are offered discounts on new products in exchange for recycling their old devices with Apple. These old models are brought back to the factories, stripped, and their parts which are still in good condition are used in newer products. This recycling approach helps Apple be more environmentally friendly, and also save money on production costs.

Apple Inc has a life cycle assessment process that evaluates the effect a product has on the environment throughout its life cycle and the objective of the assessment does is to improve resource efficiency while trying at the same time to reduce the impact the product has on the environment during the activities of recycling, manufacturing, re-manufacturing, distribution, usage and disposal.

- (i) Name some sourcing strategies being used by Apple Inc?
- (ii) To what countries APPLE outsources its manufacturing? What are the risks associated with it?
- (iii) What do you mean by "drop shipping"?
- (iv) Name the distribution strategy adopted by Apple Inc? What type of problems you visualise with the adopted strategy?
- (v) What are different pricing strategies adopted by Apple Inc?
- (vi) How do you define perishable inventory? Cite example
- (vii) What is reverse logistics? How it differs from forward logistics?
- (viii) What are the 5 Rs of Reverse Logistics?
- (ix) Suggest some ways which may help efficient synchronization of data between the central warehouse and Apple's stores and customers.
- (x) What do you mean by life cycle assessment process?

Q 5. Case Study

ABC is a toy manufacturing company which is in the business for the past two decades. The manufacturing unit is situated in Mumbai, while its sales and marketing are spread over a large geographical area, especially in the major cities across the country. Over the years, a number of competitors have sprung in the field. Far from child's play, the company found that the toys' sector is a tough business.

Some of the problems faced by it are:

- There is a massive sale during the festival seasons. If the company's product is delayed, the valuable market is missed.
- "Fashion" or "cult" status products influence the market. Any wrong decision in this matter, means loss of sales and build-up of unwanted inventory
- There are high marketing and promotional costs. If these programmes go out, the sales drop massively
- Any misjudge of the market can also mean closing down of the company
- The company has problems regarding stock holding at its distribution centres. This is mainly due to wrong inputs from feedbacks and improper surveys.
- The company relies mainly on hired fleet of road transport. The services are not up to the mark in terms of delivery schedules, safety of goods from pilferage/theft, and mishandling of product.
- Marketing strategies are far from adequate. They are not effective enough to counter the strategies adopted by the competitors

You are called upon by the management of ABC to head their logistics operations.

You are required to study and guide the company regarding the following matters.

- a) Warehousing at distribution centres and large retailers to cut down inventory costs plus other suggestions in order to reduce inventory carrying costs
- b) Advantages of outsourcing in terms of preparing girls' and boys' toys, toys in local languages, toys for different age ranges, packaging, effecting savings on damages/transport, responding fast to customers' requests, etc.
- c) Alternatives with regard to having own fleet of trucks for transportation
- d) How to cut down cost on advertisement campaigns by alternative forms of spreading awareness?
- e) Suggestions to counter competitors' strategies