



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

**Dec 2014**

Post Graduate Diploma in Materials Management

Paper 17

ADVANCED SUPPLY CHAIN MANAGEMENT

Date: 19.12.2014  
Time: 2.00 p.m. to 5.00 p.m.

Max. Marks 100  
Duration 3 hours

Instructions

1. The question paper is in three parts
2. Part A is compulsory. Each sub question carries one mark.
3. In Part B answer any 3 questions out of 5. Each question carries 16 marks
4. Part C is a case study with sub questions and it is compulsory.

Total marks-32  
Total marks-48  
Total marks-20

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**PART A - Compulsory (32 x1 = 32 marks)**

Q. 1. Fill in the blanks.

8 marks

- i) When the operational requirements are satisfied the performance cycle structure is \_\_\_\_\_
- ii) Accumulating materials at one step in the process before it can be released to the next process is called \_\_\_\_\_
- iii) The increase in variability as we move up in the supply chain is called \_\_\_\_\_ effect.
- iv) 3PL allows a firm to focus on its \_\_\_\_\_ activities.
- v) Lead time can be reduced by locating large number of \_\_\_\_\_ close to the market.
- vi) \_\_\_\_\_ is a systematic approach to the development of competitive advantage.
- vii) \_\_\_\_\_ are smaller versions of data warehouses and usually stores a smaller set of data and are more departmental in scope.
- viii) Supply chain \_\_\_\_\_ is the cost of making and delivering a product to a customer.

**Q.2. State True or False**

**8 marks**

- a. Centralized inventory reduces both safety stock and average inventory in the system.
- b. The most important requirement for an effective RSP is advanced information systems.
- c. Shipment of items between different facilities at the same level in the SC is called cross docking.
- d. Design of supply chain wherein the loss in one part is offset by gain in another part is called speculative strategies.
- e. Mass customization relates to the delivery of a small range of standard products to a large number of customers at low cost.
- f. In RFID active tags require internal power sources to communicate.
- g. Centralized data management and retrieval is called data mining.
- h. XYZ analysis is used to identify vital items.

**Q.3. Expand the following**

**8 marks**

- a) SKU
- b) EFT
- c) POS
- d) RSP
- e) TPS
- f) TMS
- g) PDA
- h) CTP

**Q.4. Match A and B**

**8 marks**

- | <b>A</b>                         | <b>B</b>                   |
|----------------------------------|----------------------------|
| 1) Grey Box                      | a) Routing                 |
| 2) TPS                           | b) Technology              |
| 3) Communication within the firm | c) Individual transactions |
| 4) Object Naming Service         | d) Collaborative team      |
| 5) Warranty claim                | e) Local authorities       |
| 6) SDE classification            | f) Ownership cost          |
| 7) Octroi                        | g) Availability            |
| 8) GIS                           | h) Intranet                |

## **PART B**

**48 marks**

**( Answer any three. Each question carries 16 marks)**

- Q.5. a) Why is it important for an organization to periodically review its logistics network design?  
b) Discuss about the trade-offs that is to be considered while comparing centralized distribution system with that of a decentralized distribution system.
- Q.6. a) What are the factors that contribute to increase in variability in the supply chain?  
b) Explain the situations where alliances are appropriate.
- Q.7. a) What is E-business? Explain with examples.  
b) How does RFID technology facilitate information collection and exchange throughout the supply chain?
- Q.8. a) 'The end game must be a lower TCO, even if it means a higher purchase price.' Do you agree? Explain why you agree or disagree with this statement.  
b) What is service response logistics? Explain why it is important.
- Q.9. Write short notes on any four
- a) Fourth party logistics
  - b) Principles of supply chain information
  - c) Artificial Intelligence
  - d) Mass customization
  - e) Cross docking

## **PART C**

**20 marks**

### **Q.10 Case Study (compulsory)**

Vector SCM is the lead logistics provider worldwide for vehicle manufacturer General Motors (GM). The company is a joint venture between GM and CNF, Inc., a \$6 billion management company of global supply chain services. Founded in December 2000, Vector SCM draws from the supply chain expertise of all of CNF's operating companies: Con-Way Transportation, Emery Worldwide and Menlo Logistics. Ultimately, the goal is for Vector SCM to provide GM with a seamless, integrated, end-to-end visibility of all material and vehicles moving within its worldwide supply chain through a common information technology system.

According to the group vice president, GM worldwide purchasing and production control and logistics, "Vector SCM will provide to GM solutions to the tremendous logistical challenges facing the automotive industry today. We have over 180 million pounds of material delivered to GM daily from 12,000 origins, and ship over 8 million vehicles per year. Vector SCM will build the management tools to fulfill our requirements, accelerating the speed and reliability necessary to satisfy the changing demands of our customers."

GM is undergoing a company-wide effort known as Order-to-delivery. The objective of this OTD is to provide accurate and reliable delivery of vehicles to customers and slash GM's order cycle time from its current level of more than 60 days to an average of 15 to 20. Intent of Vector SCM was to provide the expensive supply chain engineering expertise along with advanced Web-based technologies to product end-to-end visibility of all materials and vehicles moving within GM's supply chain, while improving overall logistics capability of GM and its affiliates.

Vector SCM leverages the extensive supply chain engineering expertise of all of CNF's operating companies. The advanced, Web-based software technologies to be used by Vector SCM were developed by CNF. They include supply chain visibility and compliance system called Vector Vision that will facilitate the management of all materials and finished vehicles in the GM pipeline, improving the reliability and flexibility of GM's production and distribution system.

At the time Vector SCM was formed, GM was using multiple Third-party logistics providers, each with separate information technology systems that did not interface well. Once electronic data links are established from all of the service providers to the new Vector Vision system, Vector SCM will be able to optimize the materials network, increasing the speed at which materials move, and reducing costs.

The new company began its transition period in North America in early 2001. A goal was for Vector SCM to be expanded in varying degrees to other global regions as plans became more finalized. Ultimately, Vector SCM will function as GM's 4PL provider, managing all aspects of GM's supply chain including coordination among all 3PLs engaged by GM.

**Questions:**

- 1) Do you agree with the decision of GM to outsource its logistics activities? Why?
- 2) Why GM decided to appoint a lead logistics provider? What are the responsibilities of a lead logistics provider?
- 3) What are the reasons for selecting Vector SCM as the lead logistics provider?

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