



INDIAN INSTITUTE OF MATERIALS MANAGEMENT
Post Graduate Diploma in Logistics Management

Dec 2014

PAPER-5

LOGISTICAL SYSTEMS OPERATION

Date: 13.12.2014
Time: 2.00 p.m. to 5.00 p.m.

Max Marks: 100
Duration: 3 Hours

Instructions:

- 1) Part A- Answer all questions
- 2) Part B-Answer any three questions
- 3) Part C -Compulsory

Total Marks=32
Total Marks=48
Total Marks=20

PART - A

Q.1 True or False

Marks (8)

- a) Forecasted demand cannot be classified as either dependent or independent.
- b) One of the functions of inventory is buffering uncertainties with safety stocks.
- c) For a retailer, inventory management is fundamentally a matter of buying and selling.
- d) The main disadvantage of water transportation is the longer shipment time.
- e) Establish appropriate forecast feedback loop so that process can be improved.
- f) The prime factor in the selection of warehouse is not the availability of services but only cost considerations.
- g) Laying of pipe lines is labour intensive; hence variable operating costs are extremely high after the pipe line is constructed.
- h) A subway sandwich store offers a narrow but deep assortment of products.

Q.2. Fill in the blanks.

Marks(8)

- a) requires a forecasted quantity for planning and coordination.
- b) can be developed from two perspectives, the top-down approach and the bottoms-up approach.
- c) The time horizon for logisticsforecast is normally one year or less.
- d) There are three categories of forecast techniques-quantitative, and casual.
- e) While MRP is determined by a schedule controlled by the enterprise, the DRP is guided by the consumer
- f) For a manufacturer, inventory does have a long term dimension.
- g) The safety stock function concerns range variations in either demand or replenishment.
- h) Decoupling provides maximum operating within a single manufacturing facility by stockpiling work-in-process between production operations.

Q.3. Give full-form of the following.

Marks(8)

- | | | | |
|---------|-----------|---------|---------|
| a) RFID | b) TQM | c) VMI | d) ASRS |
| e) JIT | g) MRP II | h) AGVS | i) TOFC |

Q.4 Match the following from Column A and Column B

Marks(8)

Column A

Column B

1. Bottoms-up Approach	a) Gap between actual sales and actual forecast
2. Top-down Approach	b) This develops a national level SKU forecast & then spreads volume across locations on the basis of historical sales pattern.
3. Inventory decisions	c) are typically used in combination with conveyers
4. Safety stocks	d) is a target specified by management
5. Automated devices	e) covers facility expenses related to product holding rather than product handling.
6. Forecasting error	f) protects against uncertainty due to variation in replenishment or in demand.
7. Storage cost	g) are low risk and low impact from the purpose of logistics operator
8. Service level	h) is decentralized since each distribution centre forecast developed independently

PART – B (any three)

3 x16 = 48 marks

Q5. What are inventory management policies? Explain in detail the different approaches.

Q6. Explain in detail the concept of warehouse functionality. What are the economic and service benefits derived from the warehouse.

Q7. What is DRP? What are the benefits and constraints?

Q8. Why are forecasts necessary? What are general forecast considerations? Also explain the forecast approaches.

Q.9. Write short notes (Any four)

- a) Barcoding
- b) Training of Materials Management personnel.
- c) Third party logistics
- d) Costing of transport service
- e) Out-bound logistics.
- f) Handling of hazardous materials.
- f) Private ware houses

PART- C

Q.10. CASE STUDY

20 marks

M/s Shriram Sheet Metal Works is a limited company with sheet metal work, fabrication, manufacturing and assembly as the main work. The firm handles all types of materials both metallic and non-metallic, besides some non-ferrous items. Considering the nature of work, off cuts, end pieces, wastage and scrap generation is inevitable. The same is being dumped in one of the company warehouse from where it was periodically disposed off. The yearly turnover is estimated to be about Rs 200 crore, and the overall wastage was in the order of about 8 %

The company also periodically accumulates returns (return items) that are mainly on account of faulty manufacturing or due to damage in transit. The returns again are high and of the order of about 6 %

There are more group companies close by, and are doing similar sheet metal work but with different sizes. The parent unit supplies basic raw materials to all these group companies by trucks some of which return empty after delivery. The work culture is such that all the wastage and scrap generated is sold by individual units on as is where basis including the return materials.

During one of the meetings relating to brain storming session of group companies, one of the Managers suggested that some of the off-cuts or part of the wastage can be used by the other group companies, and also the method collection of wastage and scrap needs to be reviewed for better realisation of revenue. Also the returns/rejects need to be examined closely and analysed, and corrective action taken. A serious attempt should be made to salvage these returns for possible reuse or cannibalise the useful components. The ones that cannot be salvaged only should be sold as scrap

Considering the amount of loss to the company, it was decided by the top management to have a total review of this whole collection and disposal process including the returns due to faulty manufacturing or due to damage in transit.

You are already working as the plant Manager of the parent company M/s Shriram Sheet Metal Works. The top management desired that you be given the extra responsibility for taking the lead and setting things right. You may take the help of others as may be needed, and review the whole process from delivery of raw materials to group companies, collection and disposal process including recycling/salvage of the returns/rejects to show clear financial benefits. Also suggest the changes that may be necessary so that the wastage percentage is reduced considerably, and also the returns % has to go down that is due to faulty workmanship and the ones damaged in transit .The Company will reward you and your team suitably. You may assume any data as may be considered necessary.

Please outline five major steps that you will take to revamp the whole process. Please also explain these five major steps in detail.
