## INDIAN INSTITUTE OF MATERIALS MANAGEMENT
**Post Graduate Diploma in Logistics Management**

**Paper –5**
**Logistics Systems Operation**

Date: 12.12.2009                                                          Max. Marks: 100
Time:  2.00 pm to 5.00pm                                      Duration: 03 Hrs.

**Instructions:**
1. From Part - A, answer all questions, each sub question carries 1 mark
2. From Part – B, answer any three questions out of five questions. Each question carries sixteen marks.
3. Part –C is a case study of 20 marks.

## Part –A

**Q.1) Write the full form**                                              **Marks (8)**

     i. ABC
    ii. VED
   iii. SDE
   iv. HML
    v. MNG
   vi. FSN
  vii. EOQ
 viii. BEP

**Q. 2) Fill in the blanks**                                              **Marks (4*2=8)**

    I. Two important material storage functions are i) _____ and ii) _____

   II. The two important information handling functions are i) _____ and ii) _____

  III. The two warehouse site selection criterions are i) _____ and ii) _____

  IV. For planning, layout and operation of the warehouse system any two important principles are i) _____ and ii) _____

**Q. 3) State whether true or false**                                              **Marks (8)**

    I. Short term forecast is for more then one year.
   II. Long term forecast is for less then one year.
  III. Forecast helps in efficient planning.
  IV. Forecast is based on past data but future may not be the copy of the past.
   V. Conditions within the company affect forecasting.
  VI. Moving Average Method provides a simple and good estimate for forecasting
 VII. The two important factors for selecting smoothening constant for Exponential Smoothening Method are distribution of random error and cost associated with forecasting.
VIII. Forecasting with trend projections give better results then theoretical ones.

**Q. 4) Match the following**                                             **Marks (8)**

| Sr. No. | Column A | Sr. No. | Column B |
|---------|----------|---------|----------|
| I | Wood | A | Cannot take more load |
| II | Plastic | B | Can be repaired in house |
| III | Corrugated Board | C | Not Disposable |
| IV | Metal | D | Prone to attack by insects |
| V | Wood | E | Very Strong |
| VI | Plastic | F | Light Weight |
| VII | Corrugated Board | G | Most Durable |
| VIII | Metal | H | No dimensional variation |

## Part B
(Answer any **three** questions)

**Q. 5)** Discuss in brief three types of warehousing options.                 **(16)**
**Q. 6)** What do you understand by packaging as unitization?                 **(16)**
**Q. 7)** Discuss various methods of forecasting.                 **(16)**
**Q. 8)** Explain with figure:                 **(16)**
   I.  Order Quantity
   II.  Safety Stock
   III.  Lead Time
   IV.  Reorder Point for an inventory model.

**Q. 9)** Prepare ABC analysis of the following sample of items in an inventory

| Item | Annual Usage Units | Unit Cost Rs. |
|------|--------------------|---------------|
| A | 30,000 | 0.01 |
| B | 2,800 | 1.5 |
| C | 300 | 0.10 |
| D | 1,100 | 0.05 |
| E | 400 | 0.05 |
| F | 2,200 | 1 |
| G | 1,500 | 0.05 |
| H | 8,000 | 0.05 |
| I | 3,000 | 0.30 |
| J | 800 | 0.10 |

According to usage "A" class up to 10%; "B" class up to 40% and remaining are "C" class items.                 **(16)**

## Part C
(Compulsory Question)

**Q. 10)** A company requires 16, 000 units of raw material costing Rs. 2 per unit. The cost of placing an order is Rs. 45 and the carrying costs are 10% per year per unit of the average inventory. Determine:
   I.  Economic order quantity
   II.  Cycle Time
   III.  Total variable cost of managing the inventory.                 **(20)**