



**INDIAN INSTITUTE OF MATERIALS MANAGEMENT**  
**Post Graduate Diploma in Materials Management**  
**Graduate Diploma in Materials Management**  
**PAPER No. 10**  
**INVENTORY MANAGEMENT**

**Dec 2014**

**Date : 18.12.2014**  
**Time : 10.00a.m. to 1.00 p.m.**

**Max. Marks :100**  
**Duration : 3 Hrs.**

**Instructions:**

1. The question paper is in three parts A, B & C.
2. Part A is compulsory. Each question carries one mark. Total : 32 Marks
3. In Part B, answer 3 questions out of 6. Each question carries 16 marks. Total : 48 Marks
4. Part C is a case study with sub questions and it is compulsory. It carries 20 marks.
5. Use of calculator is allowed wherever necessary.
6. Graph sheets can be used wherever necessary.

---

**Part – A (compulsory) 32 marks**  
**(Attempt all questions each question carries 1 mark)**

**Q.1. Fill in the blanks. (Do not reproduce the statement) 8 marks**

- i) \_\_\_\_\_ takes care of fluctuations in demand and lead time.
- ii) HML analysis divides an organizations inventory into three classes based on \_\_\_\_\_  
\_\_\_\_\_
- iii) Inventory used to run operations independently is called \_\_\_\_\_ inventory.
- iv) Completed products which are awaiting dispatch to customers are called \_\_\_\_\_  
inventory.
- v) Assuming no safety stock and average daily consumption of 100 units and a lead time of 5  
days the reorder point will be \_\_\_\_\_.
- vi) Time series analysis is a \_\_\_\_\_ forecasting method.
- vii) Waste is something that does not add \_\_\_\_\_
- viii) \_\_\_\_\_ spares have high reliability and may not fail during the life of the equipment.

**Q.2. State True or False (Do not reproduce the statement) 8 marks**

- i) MRP is a type of inventory in manufacturing organizations.
- ii) Trend projection is an example of time series method of forecasting.
- iii) The philosophy of JIT is elimination of inventory.
- iv) The average inventory in P model is higher than Q model.
- v) Stock out costs are easy to calculate compared to surplus stock costs.
- vi) Time bucket in MRP refers to a time period, such as a week, two-week period, etc.
- vii) Ordering cost is calculated by dividing the total order value divided by the number of orders.
- viii) For an air conditioner manufacturing unit the demand for compressor is independent.

**Q.3. Expand the following**

**8 marks**

- i) WIP
- ii) JIT
- iii) MPS
- iv) BOM
- v) VED
- vi) MAD
- vii) ROP
- viii) EOQ

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

**8 marks**

- | A                      | B                           |
|------------------------|-----------------------------|
| i) Periodic review     | a) Product structure tree   |
| ii) Cycle counting     | b) Forecast accuracy        |
| iii) ABC analysis      | c) Shelf life               |
| iv) Lead time          | d) Closed loop              |
| v) BOM                 | e) Time triggered           |
| vi) Mean error         | f) Verify inventory records |
| vii) PQR               | g) Pareto law               |
| viii) Feedback to plan | h) Indent to receipt        |

**PART - B**

**Write any three (3) of the following questions – 16 marks each (48 Marks)**

- Q.5 a) What is the role of inventory in an organization?  
b) Explain various costs associated with inventory.
- Q.6 a) Briefly explain the various inventory replenishment systems?  
b) What are the steps involved in ABC classification?
- Q.7 Write short notes on any four
- a) Safety stock
  - b) Inventory accuracy
  - c) Reorder point
  - d) Service level
  - e) Forecast error

- Q.8 a) What is EOQ? What are its limitations? What are the assumptions used in deriving EOQ formula.
- Q.9 Differentiate between (Any two)
- a) Under stocking cost and over stocking cost
  - b) ABC analysis and XYZ analysis
  - c) MRP and MRP II
  - d) Dependent demand and independent demand
- Q.10 Eliminating wastages is the centre of JIT. Identify sources of waste in your organization and suggest methods to eliminate or reduce them.

### **PART – C**

**Q. 11 Compulsory**

**(20 marks)**

Office Force is a stationery supplier to Unique Consultants. One of their popular products is notepads. Office Force offers the following quantity discount structure based on how many dozen notepads are ordered.

Ordering slabs	Price per dozen
1-19 dozens	Rs 21.95
20-99 dozens	Rs19.95
100-199 dozens	Rs18.95
200 +	Rs17.95

Unique Consultants would like to decide how many notepads to order using the EOQ model for quantity discounts. Its ordering cost is Rs 35 per order; its anticipated demand in the coming year is for 1500 dozen notepads. Its annual carrying cost rate is 40 percent of acquisition cost.

- a) How many dozen notepads should Unique Consultants order each time?
- b) What should be the resulting total inventory cost per year?
- c) How many orders per year should be placed?
- d) What is the average inventory level?

\*\*\*\*\*