



**CII Institute of Logistics**  
PGDSCM & Certificate Programs  
Semester-end Examination – June 2009

**Ware House and Inventory Management**

Time : Three Hours

Marks : 100

Part A

*Answer all questions*

*(20 x 1 = 20 Marks)*

1. Block stocking
  - a) Uses the racking storage systems
  - b) Uses vertical storage systems
  - c) Does not use any of the storage systems
  - d) Uses horizontal storage systems
2. Collation, which is one of the functions of a Ware House, related to
  - a) Receiving the goods
  - b) Dispatching the goods
  - c) Storing the goods
  - d) Bringing and Consolidating the goods before dispatch
3. Choice of Unit load is determined by
  - a) By the type of Material Handling Equipment
  - b) By the size and design of ware house
  - c) By the nature and characteristics of goods passing along the supply chain
  - d) By the type of storage system
4. Moving goods over short distances into, within, and out of warehouses and manufacturing plants is called:
  - a) Inventory expediting
  - b) Material Handling
  - c) JIT Inventory Management
  - d) Inventory Management
3. 5. One of the functions of ware house is:
  - a) Assembling
  - b) Picking
  - c) Planning
  - d) Forklift maintenance
6. Which activity cost holds the major cost in warehouse activity?
  - a) Receiving
  - b) Storage
  - c) Put away
  - d) Picking
7. Inspection is involved in which activity?
  - a) Cross Docking
  - b) Receiving
  - c) Picking
  - d) Storing
8. Collation, which is one of the functions of a Ware House, related to
  - a) Receiving the goods
  - b) Dispatching the goods
  - c) Storing the goods
  - d) Bringing and Consolidating the goods before dispatch
9. One of the ware house performance metrics is:
  - a) Cost reduction in material
  - b) Cash to Cash cycle time
  - c) Shipping accuracy
  - d) Production cycle time
10. Inspection is involved in which activity:
  - a) Cross-Docking
  - b) Receiving
  - c) Picking
  - d) Storing
11. One of the factors affecting the number of ware houses:
  - a) Capital expenditure of material handling equipment
  - b) Ware housing costs
  - c) Procurement costs
  - d) Packing costs
12. Cross Docking requires:
  - a) More storage space
  - b) Less storage space
  - c) No storage space
  - d) None of the above

13. The true Multi-Echelon system would reduce the cycle inventory in the whole supply chain  
TRUE / FALSE

14. ABC analysis in Inventory control is based on

- a) Cost of the material
- b) Stock quantity on hand
- c) Annual consumption value of the items
- d) None of the above

15. EOQ may not be applicable when the requirements are irregular or where there is impending price rise.  
TRUE / FALSE

16. Throughput refers to:

- a) Storage capacity of a ware housing facility
- b) Volume through the pipeline
- c) Inventory in one month period
- d) Amount of product entering and leaving a facility in a given time period

17. Which is not part of Inventory of an organization?

- a) MRO inventory
- b) Stock owned by Customer
- c) WIP inventory
- d) Stock at ware houses

18. Raw Material safety stock quantity is dependent upon:

- a) Supplier Lead time
- b) PO Process time
- c) Consumption Rate and per unit value
- d) All of the above

19. Inventory cost will not include:

- a) Procurement cost
- b) Out of stock cost
- c) Over stock cost
- d) Marketing cost

20. Important consideration of EOQ is:

- a) Annual consumption in units

- b) Procurement cost per order
- c) Unit Price
- d) All of the above

### Part B

Answer any four

Marks: 4 x 10 =40

1. Explain role of inventory in supply chain
2. Describe in detail the Independent and Dependant demand systems in Inventory Management
3. How Material Handling Systems support ware housing operations?
4. What are the functions of Ware House Management System?
5. Write notes on benefits of Bar code and RFID in logistics
6. Write short notes on:
  - a. DRP
  - b. Multi Echelon Inventory system

### Part C

#### Case Study

#### RICH INDUSTRIAL CHEMICALS

RICH Industrial Chemicals (RIC) was a large producer of several industrial chemicals that were widely used in the manufacture of steel, glass, and rubber and in various types of food processing operations. The RIC operation itself was a continuous, 24-hour-a-day processing operation in which the ingredients for a finished chemical underwent a series of a dozen or more purifying, mixing, and concentrating operations. After each operation was completed, the chemical was put in liquid form and pumped to the next processing operation, in some cases at high temperatures and in others at low temperatures. In total, the plant had over 400 pumps and 50 major processing machines in operation.

RIC's supply department was organized into four sections: (1) operating materials, (2) capital equipment, (3) maintenance parts for capital equipment, and (4) MRO supplies. In terms of purchase order activity the maintenance parts section was the largest of the four. RIC had developed an extensive and carefully planned two-phase preventive maintenance program. In the first phase, each pump and each major piece of equipment was taken out of service for a short period of time each month and given preplanned, routine maintenance, such as replacement of bearings, seals, and other parts subject to predictable wear. The second phase

involved a production shutdown and complete overhaul of each piece of equipment every eighteen months. Bills of material and engineering drawings for all machines were on file, and a list of specific parts required for the overhaul of each machine was available approximately four months before the work was to be done.

For the upcoming phase-two shutdown, maintenance parts supply manager “Mr. Rahul” was handling the requirement for three large cast pump housings. The large housings were first cast using special alloy steel, and then machined to very close tolerances to meet RIC’s precise operating requirements. Because of the high cost involved, Rahul solicited bids from four area foundries. All of the foundries responded; their quoted prices and lead times varied considerably. Because of the tight timing requirements, Rahul elected to go with Essar Foundry, which quoted a twelve-week delivery, even though Essar’s price was approximately 10 percent higher than the low bidder. Rahul had done business with Essar before and knew that it was a reliable, highquality firm. In addition, the Essar sales representative assured Rahul that his firm could easily meet her twelve-week delivery requirement. Four weeks before the scheduled delivery for the castings, Rahul received a call from the inside sales department at Essar. The young man on the other end of the line told her that two of the three castings had to be scrapped because of problems that developed during the machining operations. This unexpected turn of events left Rahul speechless—he did not know what to say next.

Answer all the four

Marks: 4 x 10 =40

1. Was the decision taken by Rahul is right- in view of the urgency of Phase 2 shutdown completion?
2. Was the follow up strategy from RIC was right for such a critical item?
3. If you had been Rahul, how would you have handled this function?
4. Comment on the supply department organization of RIC and how it can be effective for improving inventory controls of RIC.

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