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**Presidency University**

**Bengaluru**

 **School of Management**

**Summer -Term End Term Examination - August 2024**

**Date**: 05-08-2024

**Time**: 9:30am – 12:30pm

**Max Marks**: 100

**Weightage**: 50%

**Semester**: 3

**Course Code**: MBA3043

**Course Name**: Warehousing and Inventory Management

**Department:** SOM

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any information on the question paper other than roll number.*
3. *Question paper consists of 3 parts.*

**PART A**

**Answer any 10 Questions. Each question carries 3 marks. (10Qx 3M= 30)**

1. Just In Time (JIT), is significant in the supply chain as well as a tried technique as an inventory management method.

Question: List the benefits and draw backs of JIT. (CO:01 Knowledge)

1. Efficient lot size management directly impacts inventory control, order fulfillment and customer satisfaction.

Question: Explain Lot size in this context ( CO:01 Knowledge)

1. When the demand is uncertain, instances of shortages occur while operating the system with EOQ

Question: Summarize any concept of handling uncertainty in demand. (CO:01 Knowledge)

1. List Functional Classification of Inventory. (CO:01 Knowledge)
2. Review the assumptions while deriving the EOQ model. (CO:01 Knowledge)

1. Describe briefly functions of a Ware House. (CO:01 Knowledge)
2. Explain Inventory – carrying cost. (CO:01 Knowledge)
3. Classify factors affecting Inventory. (CO:01 Knowledge)
4. Arrange various steps of Ware house management. (CO:01 Knowledge)
5. Inventory management is a key part of an organization's decision-making process.

Question: Recognize different types of decisions. (CO:01 Knowledge)

1. State Warehouse Operations KPIs (critical performance metrics)**.**  (CO:01 Knowledge)
2. Arrange various types of inventories for planning. (CO:01 Knowledge)

**PART B**

**Answer any 4 Questions. Each question carries 10 marks. (4Qx 10M= 40)**

1. List down briefly the various inventory management techniques prevalent in the industries.

Question: Apply any one of the listed techniques that would be suitable to a Medical Store.

 (CO:02 Application)

1. A transformer manufacturer uses copper as a key ingredient. The average weekly requirement of copper is 200 tons. The lead time for the supply of copper is two weeks. If the manufacturer places **monthly orders** of copper.

Question: Determine suitable cyclic inventory & pipeline inventory in the system.

 (CO:02 Application)

1. The Center of gravity is used by the industries for location decision that minimizes the weighted distance between the warehouse and its supply and distribution points.

Question: Prepare a plan using above method for an upcoming FMCG retail chain in north Bangaluru.

 (CO: 02 Application)

1. ABC analysis is a strategy to segment inventories based on profitability prioritization based on Pareto principle.

Question: Interpret above statement with the help of the sales result given below.

A start up stationery online, had a good quarter, and tries to manage inventory using ABC analysis. The chart below shows the sales report of the quarter.

|  |  |  |
| --- | --- | --- |
| Product | # Items sold | Rs. Sales |
| Desk Organiser | 30 | 70,000 |
| Envelopes |  80 |  20,000 |
| Art Supplies |  120 |  10,000 |

 (CO: 02 Application)

1. Apart from necessary building blocks to put inventory management systems, organizations employ some methods to manage and control inventory.

 Question: Choose any inventory control system in this context and discuss.

 (CO: 02 Application)

1. EOQ is an inventory management technique that helps businesses determine the ideal quantity and when to order an item while minimizing inventory costs.

A company estimates that it will sell 12,000 units of its product for the year. The ordering cost is Rs. 100 per order, carrying or holding cost per unit per year is 20 % of the purchase price per unit. The purchase price per unit is Rs. 50. The company works for 250 days in a year.

Question: Find – a. EOQ b. No. of orders per year c. Time between successive orders considering the above scenario.

 (CO: 02 Application)

**PART C**

**Answer the following Questions. (2Qx 15M= 30)**

1. The daily demand for an item is stochastic and follow the normal distribution with a mean of 100 and standard deviation of 20. The supplier of the item takes 2 weeks to deliver the item from the date the order is placed.

Question: Calculate the appropriate reorder point (ROP) for 90 per cent service level.

 For 90 % service level, Consider If α = 10 % denoting the probability of stockout, and (1 - α) = 90 %

 denoting the desired service level and from standard normal table Z α = 1.28.

 (CO:03 Analysis)

1. A 2 - wheeler OEM manufactures a large quantity of components. The demand is continuous and inventory planning could be done independent of the production plan. The annual demand for an item is 2,500 boxes. The co procures it from a supplier @ of Rs. 750 per box. The cost of carrying inventory is 18 % per unit per annum and the cost of ordering is Rs. 1,080 per order.

 The company works for 250 days in a year and use EOQ inventory control model.

Question: Determine the Overall cost of the plan as given abiove.

 (CO:03 Analysis)