MWR–01

POST GRADUATE CERTIFICATE IN INVENTORY PLANNING AND WAREHOUSING SYSTEM FOR ENGINEERS (PGCIPWS)

Term-End Examination

December, 2023

MWR-01 : INTRODUCTION TO INVENTORY PLANNING AND CONTROL

Time : 3 Hours　　　　　*Maximum Marks : 70*

Note **:** *(i)* *Attempt any* ***seven*** *questions out of ten questions.*

　　(ii) *Each question carries 10 marks.*

1. (a) Discuss the importance of inventory planning and control in any engineering firm. 8

   (b) Describe the term 'Cycle Stock'. 2

2. (a) Describe the relationship between carrying cost and ordering cost. 5

(b)   What are various elements (or components) of carrying cost ?   5

3. (a)   Describe the 'Periodic order' inventory control system.   4

(b)   A company is a supplier of speedometers to Speed Auto Ltd. It supplies 20,000 speedometers to Speed Auto Ltd. annually. Ordering cost per order is ₹ 5 and holding cost is 2.5 percent of the unit price. The price per unit of piece is ₹ 200. The company has a policy of placing 10 orders every year. Advise the management of Speed Auto Ltd. to whether it should continue with the present policy or switch over to Economic Order Quality (EOQ) model.   6

4. (a)   Explain the 'Gradual Replacement Model' of inventory control system.   4

(a)   On of leading bottler of a soft drink manufacturing company in India. The annual demand at soft drink manufacturer is 200000 bottles. The carrying cost of the inventory (bottle) is ₹ 10 per bottle per year. The setup cost per bottling run is

₹ 1,000. The rate of production is 1000 bottles per day and the rate of demand is 600 bottles per day. Find the optimum size of a bottling run, i.e., the number of bottles that should be manufactured in one production run.   6

5. (a) Describe the application of any *one* of the inventory classification techniques in brief.

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   (b) Table 1 shows the details of ten items in a factory :   7

Table 1

Item Id	Unit Price (₹)	No. of units per year
a	5	1000
b	10	10
c	7	5
d	750	100
e	5	2000
f	1	150
g	8	1500
h	6	10000
i	30	20
j	4	9000

Categorize above items into categories A, B and C according to their usage values.

P. T. O.

6. Exide batteries is offering discounted prices to its retailers for the following quantities of car batteries as shown in table 2. A retailer of the company at Noida (U. P.) has an annual demand of 2500 units. The carrying cost of batteries estimated by the retailer according to past experiences is 10 percent of the inventory value (or unit price) and the ordering cost is estimated as ₹ 100 per order :   10

Table 2

No. of Units	Price (₹/unit)
50 – 99	2000
100 – 149	1900
150 and above	1800

Determine the size of the order the retailer should place with Exide batteries so that the total inventory cost is minimum.

7. Compare and contrast between qualitative and quantitative methods of demand forecasting. 10

8. (a) What do you understand by forecasting error ? Describe any *one* technique of calculating forecasting error.   4

(b) Demand pattern of a certain item is shown in the Table 3 :   6

Table 3

Year	Demand (in units)
1	100
2	120
3	110
4	140
5	160

Use the exponential smoothing method (first order) and calculate the demand forecast for the year 6. Assume the value of smoothing coefficient $\alpha = 0.8$.

9. Discuss any *one* method from the given option below for the costing of stock issued and valuation of stock in hand :   10

(i) FIFO

(ii) LIFO

(iii) Mean average price method

10. (a) Describe the purpose of physical verification of stocks.   4

(b) Outline the procedure for stock verification.   6

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