

PGDM & PGDM (IB), 2019-2021
Procurement Management
DM-442/IB-442
Trimester – IV, End-Term Examination: September 2020

Time allowed: 2 Hrs 30 Min
 Max Marks: 50

Roll No: _____

Instruction: Students are required to write Roll No on every page of the question paper, writing anything except the Roll No will be treated as **Unfair Means**. All other instructions on the reverse of Admit Card should be followed meticulously.

| Sections | No. of Questions to attempt | Marks | Total Marks |
|----------|-----------------------------|--------------------|-------------|
| A | 3 (Long Questions) | 10 Marks each | 3*10 = 30 |
| B | Compulsory Case Study | 20 | 20 |
| | | Total Marks | 50 |

Section A

A1. Assuming an ordering cost of Rs. 500/order and carrying cost of Rs. 2/unit/week, design an optimal ordering policy for the following demand forecast for a period of 8 weeks. **(CILO 2)**

| | | | | | | | | |
|---------|----|----|----|----|-----|----|----|----|
| Time, t | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Demand | 30 | 75 | 80 | 55 | 100 | 60 | 85 | 95 |

or,

A1. For the same data (given above), what is the optimal ordering sequence according to LUC and S-M heuristics? Which one is recommended? **(CILO 2)**

A2. What could be procurement strategy for bottleneck items? Discuss in terms of vendor relationships, product design & safety stock. State the assumptions for EOQ method of lot-sizing. Briefly discuss the concept of Taguchi's loss function **(CILO 1,2,5)**

or,

A2. Why make or buy decisions are important for procurement planning? Discuss some merits for both. Also, discuss PPB policy for dynamic lot-sizing. Assume any suitable data for illustration, if required. Briefly explain the concept of "best buy" **(CILO 1,2,5)**

A3. (a) The purchasing manager for Medco research laboratory orders letterhead forms and stationary from an office products firm in boxes of 500 sheets. The company uses 5,000 boxes per year. Annual carrying costs are Rs.45 per box, and ordering costs are Rs. 500. The following all unit discount price schedule is provided by the office supply company:

| | |
|------------------------|---------------------|
| Order Quantity (boxes) | Price per Box (Rs.) |
| 200-999 | 130 |

| | |
|-----------|-----|
| 1000-2999 | 120 |
| 3000-4999 | 110 |
| 5000+ | 100 |

Determine the optimal order quantity and the total annual inventory cost. **(CILO 2)**

- (b)** Explain various types of discounts offered by suppliers? Should the buyer attempt to use those discounts? Also, compare single sourcing and multiple sourcing strategies. **(CILO 3)**

or,

- A3. (a)** Briefly discuss how supplier selection and evaluation strategies vary across industries. **(b)** Analyze the following data to produce an ABC classification based on annual Rs. Usage. **(CILO 1,2,3)**

| Part Number | Annual Unit Usage | Unit Cost (Rs.) |
|-------------|-------------------|-----------------|
| 1 | 200 | 100 |
| 2 | 15,000 | 40 |
| 3 | 60,000 | 60 |
| 4 | 15,000 | 150 |
| 5 | 1400 | 100 |
| 6 | 100 | 500 |
| 7 | 25,000 | 20 |
| 8 | 700 | 30 |
| 9 | 25,000 | 10 |
| 10 | 7500 | 10 |

Section B- Case Study (CILO 1,2,4)

The purchasing manager for Omni Enterprises requested the following data from the accounting department:

Annual demand = 15,500
 Cost of placing an order = Rs. 1800
 Annual inventory holding cost = 10 percent
 Unit cost = Rs. 750

- (a) Calculate the following:
- i. The optimal order quantity
 - ii. The average number of orders.
 - iii. The total annual inventory costs.
- (b) Suppose that Omni has been arbitrarily ordering 50 times per year. What is the total annual inventory cost?
- (c) Assume that Omni incorrectly estimates the order cost to be Rs. 2500 per order. What order quantity will Omni use? What actual annual inventory costs will be incurred?
- (d) Assume Omni's demand for an item during the lead time is normally distributed with a mean of 5,000 and a standard deviation of 50. What reorder point should be used in order to average no more than one stock out every 20 reorder cycles? If safety stock is 70, how often will a stock out occur during a reorder cycle?