

**OM 01/eOM01
OPERATIONS MANAGEMENT**

Time: Three Hours

Maximum Marks: 100

Note: The paper is divided in three sections: SECTION-A, SECTION-B and SECTION-C. There are seven questions in SECTION-A. Students are required to attempt ANY FOUR. SECTION-B has 5 questions, attempt ANY THREE. All the questions of SECTION-C (Case Study) is compulsory.

SECTION-A (10 Marks each)

1. Discuss different types of Production System with suitable examples.
2. What are the important steps to be followed for a new product design and development?
3. Elaborate the importance of Plant Layout in achieving the efficiency in production system.
4. What are the factors affecting plant location?
5. Explain various possible types of Capacity Expansion Strategies, using industry examples.
6. Define Quality Management. Why is it important for every manager to understand this?
7. Write short note on any two:
(i) ISO 9000
(ii) ABC Analysis

SECTION-B (15 Marks each)

8. What is the purpose of Aggregate Planning? How is this process different from services?

9. Potential locations A,B and C have the cost structure as shown below for producing a product expected to sell for Rs. 3250 per unit. Find the most economical location for an expected volume of 2750 units per year.

Site	Fixed Cost / Year (Rs.)	Variable Cost / Unit (Rs.)
A	65,00,000	1200
B	75,00,000	560
C	55,00,000	4250

10. What are the general decisions that managers need to make regarding capacity? Identify and briefly explain ways to manage short-term capacity.
11. (a) Discuss the different components of “Ordering Cost” and “Inventory Carrying cost”
(b) The annual demand for a product is 8000 units and the cost price of the product is Rs. 20 each. Ordering cost is Rs. 80 per order and the inventory carrying cost is 18% per annum. Find the Economic Order Quantity.
12. Write a note on Service Quality Measurement. Enumerate some hard (quantifiable) and soft (intangible) standards of service quality measurement, giving some industry examples like airlines, hotels, etc

SECTION-C (15 Marks)

Case Study (Compulsory)

A small, out-of-home business caters to lunch boxes in a metropolitan city of India. Simrat caters to lunch boxes for individuals, for families, and occasionally for office parties. She categorizes her business as one of the following:

- Delivery only. Where tiffins are delivered around lunch time to individuals or family. The menu is limited but varies on a daily basis. It contains rice, curry, pickle, dessert, and chappatis with salad. The demand for this category is constant throughout the year. The delivery boy usually takes orders for the next day. However, the customer is required to call by 10 A.M. on the same day.
- Delivery and serve. This side focuses on office and home parties and requires an extensive menu. The demand is seasonal but provides for longer planning time. People book at least a week in advance. The heavy demand, for this service, is around Diwali and other festivals.

The kitchen resembles a job shop, which has the following five areas:

- Gas area for cooking meals that require time like curries.
- Second area is for cutting vegetables, and salads.
- A separate area for chapattis and rice.
- An area to prepare non-vegetarian items of the menu. Because of cultural reasons, vegetarian and non-vegetarian lines are different.
- The last is the assembly area where delivery-only orders are packed in tiffins while delivery and serve are arranged attractively.

Because of perish ability, the limited amount of raw materials and finished goods are kept in stock. Desserts are outsourced by Simrat.

Though a weekly schedule can be made for the delivery and serve category, a daily schedule is required for the delivery-only category. The delivery-only category suffers frequent stockouts in terms of raw materials. Simrat has two cooks and eight helpers who also deliver the food. Two are skilled labor while eight are unskilled.

The business environment is very competitive with augmented variables being quality, reliability, flexibility, and cost. Customers are demanding and unforgiving as switching to other service providers is easy. Simrat recently heard that by adopting a lean system, she could increase flexibility, reduce lead time, and costs.

13. (a) Will lean concepts and practices be transferable to service business?

(b) Can lean system concepts and practices be applied to Simrat's small business? What barriers could she face while trying to implement the system?

(c) What do you recommend Simrat do to take advantage of lean concepts in operating her business?