

JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

PGDM / PGDM (M) / PGDM (SM)

SECOND TRIMESTER (Batch 2023-25)

END TERM EXAMINATIONS, JANUARY 2024

MAIN

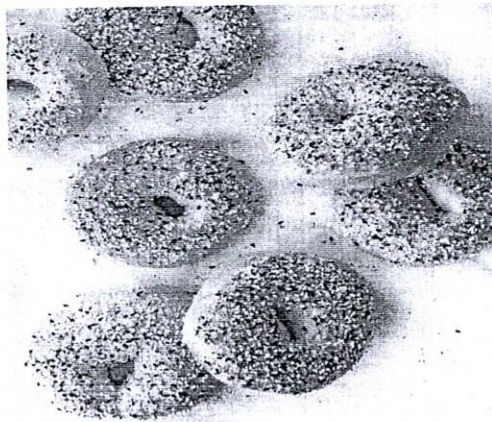
Course Name	OPERATIONS MANAGEMENT	Course Code	20502
Max. Time	2 hours	Max. Marks	40 MM

INSTRUCTIONS:

- Read the case below and answer questions in Part-A and Part B as per instructions given.
- Attempt all Questions from Part-A and 2 Questions from Part B.
- This is a closed book examination.
- Only calculators allowed. Use of mobile and any other electronic device prohibited.
- Answers should be rich in content, pointwise. Avoid unnecessarily long answers.

Case: Classic Bagel Bakery

Classic Bagel Bakery makes and sells variety of bagels including plain, onion and cinnamon raisin as well as assorted flavors of cream cheese. Bagels are major source of revenue for the Classic Bagel Bakery company (*Bagel is a bread roll originating in the Jewish communities of Poland. Bagels are traditionally made from yeasted wheat dough that is shaped by hand into a torus or ring, briefly boiled in water, and then baked. The result is a dense, chewy, doughy interior with a browned and sometimes crisp exterior*).



Bagels are very popular with consumers as they are relatively low in fat, filling and taste good. Although some bagel companies have done poorly in recent years mainly on account of poor management, Classic's business is booming. It is number one nationally with over 30 stores that sells bagels, coffee and bagel sandwiches. The stores selling Classic's products are either company owned or franchisee.

Production of bagel is done in batches, according to flavor, with each flavor being produced on a daily basis. All bagel production at Classic takes place at its central processing plant.

Production of bagel at Classic begins at the processing plant where basic ingredients of flour, yeast and flavors are combined in a special mixing machine. After the dough has been thoroughly mixed, it is transferred to another machine that shapes the dough into individual bagels. Once the bagels have been formed, they are loaded onto refrigerated trucks for shipping to individual stores. When they reach the stores, they are unloaded from trucks and temporarily stores while they rise. The final two steps of processing involve boiling the bagels in a kettle of water and malt for one minute and then baking the bagels in an oven for approximately 15 minutes.

Whole-wheat flour is a key ingredient in bagel production. Classic Bakery follows a continuous review fixed order quantity inventory management system for wheat flour. It buys wheat flour in 25 pound bags. Classic Bakery uses 1215 bags of flour in a year for bagel production. Ordering costs of wheat flour are \$10 per order. Its annual carrying costs are \$ 75 per bag.

Quality is an important feature of a successful business. Classic devotes careful attention to quality at each stage of operation from choosing suppliers of ingredients, careful monitoring of ingredients & other material, regular maintenance of equipment to keep them in good operating condition to monitoring output at each step across various processes in the supply chain. At the stores, employees are instructed to watch for deformed bagels and to remove them if they find them. Part of the deformed bagels which can be reworked are returned to the processing plant and converted into bagel chips. This helps Classic to reduce its scrap rate. Employees who work at Classic stores are carefully chosen so that they are competent to operate the necessary equipment in the stores as well to interact with customers in order to provide desired level of service.

PART-A

(Answer all 5 questions)

Q1

Director (Operations) at Classic Bakery is worried due to the increase in amount of scrap (due to deformed bagels) during the last quarter. Construct a Cause and Effect diagram to identify possible causes of this problem.

(Marks: 5)

Q2

List the various elements / dimensions of Quality from the perspective of a customer at Classic Bakery store.

(Marks: 5)

Q3

Determine the minimum total annual inventory related costs (Annual ordering costs and Annual Inventory holding costs) for the wheat flour.

(Marks: 5)

Q4 The actual sales of bagels of various flavors across all retail stores of Classic Bakery is given below.

Month	Actual Demand, nos. (000)
Mar'23	31
Apr'23	34
May'23	33
June'23	35
July'23	37
Aug'23	36
Sept'23	38
Oct'23	40
Nov'23	40
Dec'23	41

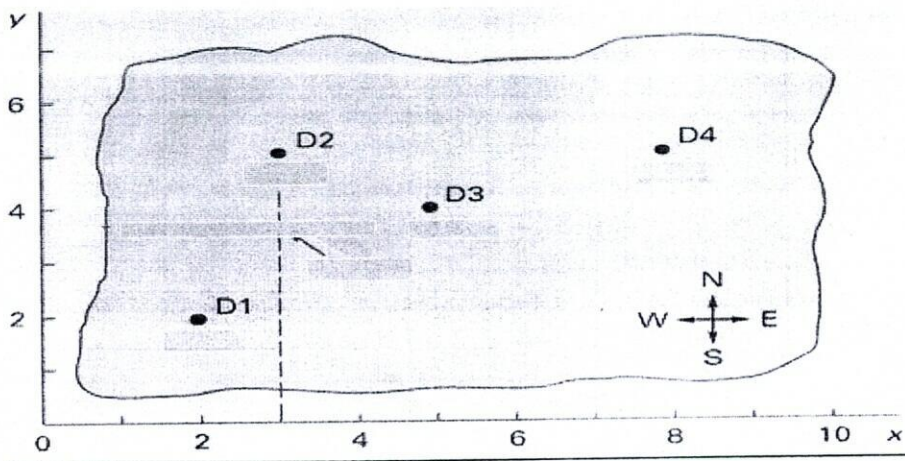
Develop a three-month moving average forecast for the next month i.e. Jan'24. Determine MAD to check the forecasting accuracy.

(Marks: 5)

Q5 Classic has multiple distribution centers in its supply chain to distribute its products to the retail stores. Each distribution center serves a cluster of stores in a given geographical area. With increase in nos. of stores, Classic Bakery is considering opening a new distribution center for delivery to four of its retail stores D1, D2, D3 and D4.

Destination Store	Quantity Shipped (nos., daily)
D1	900
D2	300
D3	700
D4	600

Grid map of the four destination stores is given below.



Using Centre of Gravity Method, determine the best location for the upcoming distribution center. Determine the distance between the location of proposed distribution center and store D4.

(Marks: 5)

PART-B

(Answer any 2 questions)

Q6 Classic is considering opening a flagship "Bagel Café" at new metropolitan area. The area is home to corporate offices of major multinational companies and is marked by stores of many leading national and international brands. The proposed Bagel Café will serve bagels of all flavors, salads, pastas, sandwiches along with hot and cold beverages.

6.1 Elaborate on the service package which should be offered at Classic's Bagel Café to enhance customer experience.

6.2 Discuss the major elements of the servicescape of Classic's Bagel Café at new metropolitan area.

(Make suitable assumptions about the Classic's Bagel Café as necessary)

(Marks: 3.5+4=7.5)

Q7 Aspire Bakery is a competitor of Classic Bakery in Bagel industry. Aspire also sells bagel and other allied products through a network of stores. However in contrast to Classic Bakery, Aspire Bakery has installed bagel making machine at each of its store instead of having a centralized production (note that at Classic Bakery, entire bagel production takes place at its centralized processing plant).

7.1 Discuss and compare the competitive priorities of operations (i.e. competitive dimensions that drive sales) at Classic Bakery and Aspire Bakery.

7.2 Discuss and compare various strategic decisions under operations function which Operations Managers at Aspire Bakery and Classic Bakery must have taken in their respective organisations.

(Marks: 3.5+4=7.5)

Q8 Following is the list of inventory items i.e. spare components (of various equipment) required at Central processing Plant of Classic Bakery. Annual usage and unit cost of each item is also given. Develop an A-B-C Classification scheme for these inventory items for better inventory management.

Item Code	Usage	Unit Cost (\$)
4021	90	1,400
9402	300	12
4066	30	700
6500	150	20
9280	10	1,020
4050	80	140
6850	2,000	10
3010	400	20
4400	5,000	5

(Marks: 7.5)