

JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA
PGDM / PGDM (M) / PGDM (SM)

SECOND TRIMESTER (Batch 2024-26)
END TERM EXAMINATIONS, JANUARY 2025
REAPPEAR EXAM

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

INSTRUCTIONS:

- 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.

Q1)

- J.J. Store sells lovely handmade table cloths at its island store. These tablecloths cost Jacky \$15 each. Customers buy tablecloths at a rate of 240 per week. J. J. store operates for 52 weeks per year. Jacky, the store owner estimates that his ordering costs are \$50. Annual holding costs are 20 percent. Lead time is 2 weeks. Using the information given-
 - Determine the economic order quantity.
 - Determine the annual inventory related costs (annual ordering costs and annual inventory holding costs).
- Discuss in brief the tradeoff of various inventory related costs involved in deciding the order size and hence cycle inventory.

(Marks 4+2)

Q2)

- Discuss the requirements (from operations perspective) and various operations strategic decisions taken by a firm to compete on a) Quality b) Cost c) Flexibility d) Speed.
- Give example of manufacturing or service firms that successfully compete on each of the criteria listed above.

(Marks 4+2)

Q3)

The Hero Motor Cycle dealer in Pune, Maharashtra area wants to forecast accurately the demand for splendor motorcycle during the next month. From sales record, the dealer has accumulated the data in the following table for the past year.

Month	Motorcycle Sales (00)
January	8
February	6
March	9
April	7
May	6
June	11
July	9
August	10
September	11
October	9
November	13
December	15

- Compute a three-month moving average forecast of demand from April to January (next year).
- Compute a five-month moving average forecast of demand from June to January (next year).
- Compare the two forecasts using MAD, measure for forecast accuracy.

(Marks 4+2+2)

Q4)

- The Burger Doodle restaurant chain uses a distribution centre to distribute the food ingredients it provides to individual restaurants. The company is attempting to determine the location of a new distribution center that will serve five restaurants. The grid-map coordinates of the five restaurants and the annual number of 40-foot trailer trucks transported to each restaurant are as follows:

Restaurant	Coordinates		Annual Truck Shipments
	x	y	
A	100	300	35
B	210	180	24
C	250	400	15
D	300	150	19
E	400	200	38

Determine the least cost location using the centre of gravity method.

- List and briefly discuss the facility layout suitable for i) Home construction ii) Grocery store iii) Management Institute iv) Mobile manufacturing

(Marks 4+2)

Q5)

- a. County School buses are inspected every month for defects. In a recent monthly inspection, 27 worn or torn seats were found, 22 buses had dirty floors, there were 14 cases of exterior scratches, there were 8 cracked windows, the engines on 4 buses had trouble starting and 2 buses had faulty brakes. Construct a Pareto Chart for bus inspections.
- b. List and briefly discuss the various costs of quality associated with bus service at County School and which should be taken into consideration by School Administration in making quality improvement efforts.

(Marks 4+2)

Q6)

- a) Professional Image Briefcases is an exclusive producer of handcrafted, stylish cases. The company assembles each case with care and attention to detail. The company targets to produce 300 briefcases in a 30 hr week. The laborious process requires the completion of six primary work elements listed below:

Work Element	Precedence	Time (Min)
A	None	2
B	A	4
C	B	5
D	None	5
E	D	3
F	None	1
G	F	2
H	C,E,G	4

Design and balance an assembly line with fewest number of workstations that will achieve the production target without violating the precedence requirements.

- b) The production and delivery of a pizza are relatively straightforward and simple process. Develop a fishbone diagram to examine the causes of late pizza delivery and plan quality improvements.

(Marks 4+4)