

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA-SEMESTER-II-EXAMINATION-WINTER-2024

Subject Code: 2529303**Date: 13/01/2025****Subject Name: Global Operations Management****Time: 02:30 PM TO 05:30 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

- Q.1** Explain the terms **14**
- a) Lean Manufacturing
 - b) Outsourcing
 - c) Critical Path Method (CPM)
 - d) ISO 9001
 - e) Reengineering
 - f) Locational Coupling
 - g) Analytical Industry

- Q.2 (a)** Discuss the features common to all forecasts and the objectives of demand forecasting. **07**
Outline the steps involved in the forecasting process.

- Q.2 (b)** Explain the meaning of product design and discuss its importance in the context of operational management. **07**

OR

- Q.2 (b)** Explain the concept of facility location. Discuss various location theories and the concept of freedom of location in operational management. **07**

- Q.3 (a)** Explain the concept of facility layout and its importance in a manufacturing or service organization. **07**

- Q.3 (b)** "Plant layout involves, besides grouping of machinery, an arrangement of other facilities also" Discuss. **07**

OR

- Q.3 (a)** Define material management and explain its role in operations management. What are the primary objectives of material management? **07**

- Q.3 (b)** Define the terms 'Project', 'Project Management' and 'Project life cycle'. **07**

- Q.4 (a)** Discuss the concept of the internationalization of research and development (R&D). What are the advantages and challenges associated with conducting R&D on a global scale? **07**

- Q-4 (b)** The activities of a project and their time estimates are given below: (a) Draw the PERT Network Diagram (b) Determine the critical path and standard deviation for the critical path. **07**

| Activity | Predecessor | Time | | |
|----------|-------------|------------|-------------|-------------|
| | | Optimistic | Most likely | Pessimistic |
| A | - | 2 | 5 | 14 |
| B | - | 1 | 10 | 12 |
| C | A | 0 | 0 | 6 |
| D | A | 1 | 4 | 7 |
| E | C | 3 | 10 | 15 |
| F | D | 3 | 5 | 7 |
| G | B | 1 | 2 | 3 |
| H | E,F | 5 | 10 | 15 |
| I | G | 3 | 6 | 9 |

OR

- Q.4 (a)** Describe the Just-in-Time (JIT) production system. What are its main principles, and how does it contribute to reducing waste and improving efficiency in manufacturing processes? **07**
- Q.4 (b)** The activities of a project and their time estimates are given below: **07**
- (a) Draw the PERT network diagram
- (b) Determine the critical path and project compilation time

| Activity | (Estimated duration of activity (in weeks)) | | |
|----------|---|---------------------------------|-------------------------------|
| | Optimistic Time (t_o) | Mostly likely time (t_m) | Pessimistic time (t_p) |
| 1-2 | 2 | 5 | 8 |
| 1-4 | 4 | 19 | 28 |
| 1-5 | 5 | 11 | 17 |
| 2-3 | 3 | 9 | 27 |
| 2-6 | 3 | 6 | 15 |
| 3-6 | 2 | 5 | 14 |
| 4-6 | 3 | 6 | 15 |
| 5-7 | 1 | 4 | 7 |
| 5-8 | 2 | 5 | 14 |
| 6-8 | 6 | 12 | 30 |
| 7-8 | 2 | 5 | 8 |

Q.5 Case Study:

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ABC Ltd. is the country's largest manufacturer of spun yarn with well-established market. ABC Ltd. has good reputation for quality and service. Their marketing department identified that the potential for global market is expanding rapidly and hence the company undertook exercise for expansion of the capacity for export market.

The company formed team of Marketing and Materials department to study the global logistics possibilities. After extensive study, the team came up with a report on global logistics and submitted that global logistics is essentially same as domestic due to following similarities:

- The conceptual logistics framework of linking supply sources, plants, warehouses and customers is the same.
- Both systems involve managing the movement and storage of products.
- Information is critical to effective provision of customer service, management of inventory, vendor product and cost control.
- The functional processes of inventory management, warehousing, order processing, carrier selection, procurement, and vendor payment are required for both.
- Economic and safety regulations exist for transportation.

The company had very economical and reliable transportation system in existence. For exports as well they decided to evaluate capabilities of their existing transporter and entrusted them with the job of transport till port. For customs formalities they engaged a good CHA after proper cost evaluation and entered into contract for freight with shipping company agent.

The response for company's export was very good and the company could get as many as 15 customers within first two months and reached to a level of USD 250,000 per month by the end of first half of the year. Based on this response the export volumes were expected to grow to a level of USD 400,000 per month by the end of the year. When the review was made at the end of the year, company found that export volumes had in fact come down to the level of USD 120,000 which was much lower than it had reached in the first half of the year.

The managing committee had an emergency meeting to discuss this and the export manager was entrusted with the task of identifying the reasons for this decline. Mr. Ganesh decided to visit the customers for getting the first hand information. When he discussed the matter with the customers, the feedback on the quality and price were good but the customers were very upset on the logistic services due to delayed shipments, frequent changes in shipping schedules, improper documentation, improper identifications, package sizes, losses due to transit damages etc.

After coming back, the export manager checked the dispatch schedules and found that production and ex-works schedules were all proper. Then he studied the logistics systems and found that the logistics cost was very high and all the logistics people were de motivated due to overwork and were complaining of total lack of co-ordination and the system had become totally disorganised.

- (a) Explain the problems experienced by ABC Ltd. What is the main cause of these problems?
- (b) Discuss the role of demand forecasting in managing inventory levels for ABC Ltd.'s export operations. How could better demand forecasting help ABC Ltd.

OR

- (a) What logistics model should the company go for to ensure proper operations of the company?
- (b) Discuss the critical role of information in effective logistics management as highlighted in the case study.
