

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
BBA - SEMESTER - V EXAMINATION - WINTER 2025

Subject Code: 1550105

Date: 20-11-2025

Subject Name: Advance Production and Operation Management

Time: 10:30 AM to 1:00 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.**

	Marks
Q.1 Attempt Any 7	14
(a) Critical Activity	
(b) Casting Process	
(c) Lean and Agile Approach	
(d) Forecast error	
(e) Subcontracting	
(f) Matrix Projects	
(g) Location Coupling	
(h) Effective capacity	
Q.2 Multiple Choice Questions (All Compulsory)	14
(1) Which of the following best defines Operations Management?	
A. Managing financial resources	
B. Managing sales and marketing activities	
C. Managing the process of converting input into output	
D. Managing human resource	
(2) Which out of following is an example of intermittent production?	
A. Mass production	
B. Batch production	
C. Project	
D. Continuous production	
(3) Which decision is not typically taken by an operations manager?	
A. Facility location	
B. Production scheduling	
C. Inventory management	
D. Advertising media selection	

- (4) Which of the following best describes “Operations Strategy”?
- A. A long-term plan for achieving competitive advantage through production activities
 - B. A short-term plan for marketing operations
 - C. A method of hiring operations staff
 - D. A policy for financial investment in operations
- (5) The main objective of demand forecasting is:
- A. To ensure smooth production and inventory system
 - B. To control quality
 - C. To reduced employee turnover
 - D. To increase sales
- (6) Out of following which method is quantitative forecast method?
- A. Delphi
 - B. Sales force opinion
 - C. Expert’s opinion
 - D. Moving average
- (7) Long-range capacity planning focuses on decisions related to:
- A. Weekly production schedule
 - B. Short term workforce adjustments
 - C. Facility expansion
 - D. Inventory replenishment
- (8) The Weber’s theory of industrial location emphasizes:
- A. Agglomeration
 - B. Availability of labor
 - C. Government subsidies
 - D. Market size
- (9) MMIS stands for
- A. Management Material Inventory System
 - B. Material Management Information System
 - C. Material Monitoring Inventory Software
 - D. Manufacturing Management Integration System
- (10) PERT is primarily used for projects that involve:
- A. Routine repetitive tasks
 - B. Uncertainty in activity duration
 - C. Financial forecasting
 - D. Deterministic scheduling
- (11) The expected time in PERT is calculated using:
- A. $(\text{Most Likely} + \text{Pessimistic}) / 2$
 - B. $(\text{Optimistic} + \text{Pessimistic}) / 2$
 - C. $(\text{Optimistic} + \text{Most Likely}) / 3$
 - D. $(\text{Optimistic} + 4 \times \text{Most Likely} + \text{Pessimistic}) / 6$

- (12) An error in facility location decision can lead to:
- A. Better profit margins
 - B. High operational cost and inefficiency
 - C. Employee retention
 - D. Enhanced customer loyalty Increased
- (13) The capacity that a firm expects to achieve in given current constraints is called
- A. Design capacity
 - B. Effective capacity
 - C. Actual capacity
 - D. Cushion capacity
- (14) Out of following which is the determinant of effective capacity
- A. Supply chain factors
 - B. Human factors
 - C. Product factors
 - D. All of these

- Q.3 (a)** Differentiate between manufacturing and service operation. How the role of an operations manager differ for both sectors? **07**
- (b)** A manufacturing organization majorly uses assembly process for production. Which process will be suitable for its requirement? Discuss the process characteristics along with its merit and demerits. **07**

OR

- (a)** Explain capacity planning and the different approaches used in long-range capacity planning. How can a company develop capacity alternatives to meet future demand fluctuations? **07**
- (b)** A firm faces frequent demand distortion along its supply chain and it heavily relies on qualitative forecasts. Can qualitative forecast be reason for the problem? If yes, give your arguments and explain how qualitative forecast leads to demand distortion. If a firm has choice to use sales force opinion and Delphi technique for forecasting demand with minimum demand distortion expected, which one shall it choose? Why? **07**
- Q.4 (a)** What can be the impact of facility location decision on firm's operational efficiency and profitability? Discuss various factors that a firm should consider while selecting facility location. **07**
- (b)** A manufacturing firm often faces stock outs of critical raw materials. As a material manager, suggest three corrective actions using inventory control techniques **07**

OR

- (a)** What is Project? Discuss characteristics of project along with life cycle of project. **07**

- (b) A project has following activities with given time estimates (in weeks). Draw the network diagram, calculate project duration, identify critical activities and calculate variance of each activity.

07

Activity	Predecessor	Optimistic time	Most likely time	Pessimistic time
A	-	2	4	8
B	-	1	2	3
C	A	2	3	4
D	A	4	6	10
E	B	1	2	3
F	C,E	3	4	5
G	D	2	2	2
H	F, G	1	2	3

- Q.5 (a) Discuss Weber's theory in detail for industrial location.

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- (b) Consider the following project involving activities A to J.

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Activity	A	B	C	D	E	F	G	H	I	J
Predecessor	--	A	A	A	D	D	E	F,G	C,H	B
Duration (months)	1	4	2	2	3	3	2	1	3	2

Construct CPM network, determine project duration and critical path.

OR

- (a) What are the various business functions that are taken care by Operations Management? Discuss them in detail.

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- (b) An event management firm uses PERT for planning a conference. Explain how uncertainty in task duration is handled in PERT compared to CPM.

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