SREENIVASA INSTITUTE OF TECHNOLOGY AND MANAGEMENT STUDIES
(AUTONOMOUS)

QUESTION BANK

Year / Semester: I MBA II Semester **Regulation: R23**

Subject and Code: Production and Operations Management - 22MBA124

SYLLABUS

SREENIVASA INSTITUTE OF TECHNOLOGY AND MANAGEMENT STUDIES
[AUTONOMOUS], CHITTOOR - 517 127
DEPARTMENT OF MANAGEMENT STUDIES

I MBA – Semester - II					
Course Code	**PRODUCTION AND OPERATIONS MANAGEMENT**	**L**	**T**	**P**	**C**
22MBA124		**4**	**0**	**0**	**4**

Course Educational Objectives:

CEO1: To understand the concepts of POM and to study about product and process designs
CEO2: To study about facilities management and aggregate planning
CEO3: To analyze about the different types of scheduling process and methods of inventory control
CEO4: To study about methods of work measurement and productivity
CEO5: To discuss about various quality control techniques

UNIT - I	**Introduction to POM**	Lecture Hrs: 10

Overview of Production and Operations Management (POM)- function-Historical Development of POM- POM scenario today.

Product and Process Design: Product and Process Development - Manufacturing Process Technology - CAD/CAM.

UNIT - II	**Facilities Management and Aggregate Planning**	Lecture Hrs: 10

Location of Facilities - Layout of Facilities - Classification of Layouts. **Aggregate Planning:** Preparation of aggregate demand Forecast - Determination of Optimal Production Strategy.

UNIT - III	**Scheduling**	Lecture Hrs:12

Scheduling in Job Shop Type Production – Shop Loading -Scheduling in Mass - Continuous and Project Type Production - Line balancing - Methods of Production Control - Methods of Inventory control-EOQ, ABC analysis.

UNIT - IV	**Work Study**	Lecture Hrs:10

Method Study - Work measurement - Work Design - Work Sampling - Industrial Engineering Techniques. **Productivity:** Basic Concepts - Productivity Cycle - Total Productivity Model.

UNIT - V	**Quality management**	Lecture Hrs:10

Economics of Quality Assurance - Inspection and Quality Control - Acceptance Sampling - Theory of control charts, control charts for variables and control charts for attributes - Total quality management and ISO 9000 series standards, Six Sigma.

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Max Marks: 10

S.No.	CO	Questions	BT
		Unit I: Introduction to POM	
1	1	What is Production and Operations Management? Explain its scope and why it is important for modern business organizations	L1,L2
2	1	How has Production and Operations Management evolved over time? Discuss its development from the early industrial period to the present-day scenario.	L2,L3
3	1	Explain the main functions of Production and Operations Management. How are these functions carried out in a manufacturing organization?	L2,L3
4	1	Is there any difference between production and operations? Compare them and explain how operations management is relevant to both manufacturing and service industries.	L4
5	1	Discuss the role of Production and Operations Management in improving productivity and competitiveness in today's global market.	L4,L5
6	1	What do you mean by product design? Explain the stages involved in developing a new product.	L2,L3
7	1	Differentiate between product development and process development. How are they related to each other?	L4
8	1	What is Manufacturing Process Technology? Explain its importance in modern industries.	L2,L5
9	1	What are CAD and CAM? Discuss how CAD/CAM systems support product and process design.	L2,L4
10	1	Suppose you are a Production Manager launching a new product. What steps would you follow in product and process design? Explain briefly.	L3,L6
11	1	Explain the present-day Production and Operations Management (POM) scenario. What challenges and opportunities do organizations face in managing operations in today's business environment?	L4,L5

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S.No.	CO	Questions	BT
Unit II: Facilities Management and Aggregate Planning			
1	2	Define facilities location and facility layout. List the main objectives of a good plant layout.	L1
2	2	Explain the factors affecting plant location decisions in manufacturing organizations.	L2
3	2	Apply any one location selection method (such as factor rating or load-distance method) to explain how a company can choose the best site.	L3
4	2	Differentiate between product layout, process layout, and fixed-position layout. Analyze their suitability for different types of industries.	L4
5	2	Evaluate the impact of facility layout on productivity, cost, and workflow efficiency. Suggest improvements for a poorly designed layout.	L5
6	2	Design a suitable facility layout for a small manufacturing unit of your choice and justify your design decisions.	L6
7	2	Define Aggregate Planning and state its objectives in production management.	L1
8	2	Explain the steps involved in preparing an aggregate demand forecast.	L2
9	2	Analyze the differences between Level Strategy, Chase Strategy, and Mixed Strategy in aggregate planning.	L4
10	2	As an Operations Manager facing fluctuating demand, develop an aggregate production plan and justify the strategy you would adopt.	L6
11	2	Determine the optimal aggregate production strategy for a company experiencing seasonal demand fluctuations. Compare alternative strategies and justify the most cost-effective option.	L5

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S.No.	CO	Questions	BT
Unit III: Scheduling			
1	3	Define scheduling. Explain its objectives and importance in production management.	L1
2	3	Explain the characteristics of job shop type production. How does scheduling differ in job shop production compared to mass production?	L2
3	3	Apply suitable scheduling techniques for a job shop with multiple jobs and machines. Illustrate with a simple example.	L3
4	3	Analyze the process of shop loading. How does proper loading improve machine utilization and productivity?	L4
5	3	Evaluate the challenges involved in scheduling for project-type production. Suggest suitable techniques to overcome them.	L5
6	3	Design a basic scheduling plan for a continuous production system and justify your decisions.	L6
7	3	Explain the concept of line balancing. Discuss the steps involved in balancing an assembly line.	L2
8	3	Apply the concept of line balancing to calculate cycle time and assign tasks for a simple production process.	L3
9	3	Differentiate between various methods of production control. Analyze their effectiveness in different production systems	L4
10	3	Explain the concept of Economic Order Quantity (EOQ). Derive the EOQ formula and state its assumptions.	L3
11	3	Discuss ABC analysis in inventory control. Evaluate its usefulness in managing inventory effectively.	L5

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S.No.	CO	Questions	BT
Unit IV: Work Study			
1	4	Define Method Study and explain its objectives and need in modern industries.	L1
2	4	Explain the procedure involved in conducting a Method Study with suitable example.	L2
3	4	Illustrate how Time Study is conducted and calculate standard time for a given job.	L3
4	4	Differentiate between Work Sampling and Time Study with examples.	L4
5	4	Examine the importance of Work Design in improving productivity and employee satisfaction.	L4
6	4	Explain various Industrial Engineering Techniques used to enhance productivity.	L2
7	4	Calculate and interpret different types of Productivity (Partial and Total Productivity) with examples.	L3
8	4	Analyze the Productivity Cycle and explain how it supports continuous improvement.	L4
9	4	Evaluate the significance of the Total Productivity Model in measuring organizational performance.	L5
10	4	Compare Method Study and Work Measurement and justify how they complement each other.	L4
11	4	A manufacturing firm is facing high labour cost and low output. Propose suitable Work Study techniques to improve performance with justification.	L6

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S.No.	CO	Questions	BT
Unit V: Quality management			
1	**5**	Define Quality and explain the concept of Economics of Quality Assurance.	**L1**
2	**5**	Explain different types of Inspection and their role in Quality Control.	**L2**
3	**5**	Describe the concept of Acceptance Sampling. Explain single sampling plan with suitable example.	**L2**
4	**5**	Differentiate between Process Control and Product Control with examples.	**L4**
5	**5**	Explain the Theory of Control Charts and discuss the components of a control chart.	**L2**
6	**5**	Construct and explain Control Charts for Variables ($\bar{X}$ and R charts) with example.	**L3**
7	**5**	Explain Control Charts for Attributes (p-chart, c-chart) and their applications.	**L3**
8	**5**	Analyze the advantages and limitations of Acceptance Sampling in manufacturing industries.	**L4**
9	**5**	Discuss the principles of Total Quality Management (TQM) and its impact on organizational performance.	**L4**
10	**5**	Evaluate the importance of ISO 9000 Series Standards in maintaining quality systems.	**L5**
11	**5**	A company is facing frequent customer complaints and high rejection rates. Propose a suitable Six Sigma approach to solve the problem with justification.	**L6**

Note: L1-Remembering, L2-Understanding, L3-Applying, L4-Analyzing, L5-Evaluating, and L6-Creating

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Instruction to Faculty Members:

The Six Levels of Bloom's Taxonomy:

1. **Remembering:** Retrieving, recognizing, and recalling relevant knowledge from long-term memory (e.g., list, define, name, locate).
2. **Understanding:** Constructing meaning, explaining ideas, or concepts (e.g., summarize, interpret, classify, compare).
3. **Applying:** Using information in new situations or implementing procedures to solve problems (e.g., solve, use, demonstrate, implement).
4. **Analyzing:** Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure (e.g., contrast, categorize, distinguish, diagram).
5. **Evaluating:** Making judgments based on criteria and standards through checking and critiquing (e.g., judge, critique, justify, defend, argue).
6. **Creating:** Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure (e.g., design, construct, develop, formulate).

References:

1. Production and Operations Management Books, Prof. K.C. Jain, 2019.
2. Production and Operations Management Systems, Sushil Gupta, Martin Starr, Taylor & Francis, 2014.
3. Production and operations Management, 3/e, Aswathappa K, Himalaya Publishing House, Mumbai, 2011. 2.
4. Production and Operations Management, 2/e, R. Panner Selvam, PHI Learning Private Ltd., New Delhi. 2006. 3.
5. Production and Operations Management, 5/e,Everett E. Adam, Jr.Ronald J.Ebert, PHI Learning Private Ltd., New Delhi, 2010.