

<p>Group "A" 2023-TU</p> <p>Brief Answer Questions:</p> <ol style="list-style-type: none"> 1. Define operations management. 2. What is supply chain management? 3. Give a concept of service design. 4. Mention the goal of ABC classification. 5. Point out the types of production system. 6. Mention the philosophical element of TQM. 7. What is the benefit of JIT. 8. Give the concept of aggregate planning. 9. Write the meaning of duality with example. 10. What is value analysis? 	<p>(2022-TU)</p> <ol style="list-style-type: none"> 11. Define operations management. 12. What is quality control chart? 13. Define quality. 14. What is the objective of assignment problem? 15. Define reorder level and lead time. 16. Highlight the reason for product redesign. 17. How are the customers served in last come first served and service in random order? Give example. 18. Write down seven tools of quality? 19. What are dependent and independent demand? 20. What is corporate strategy?
<p>2021 make up</p> <ol style="list-style-type: none"> 1. Differentiate between intermittent and continuous production system. 2. Define operations strategy. 3. What do you mean by modular design? 4. Provide the concept of location strategy. 5. What is the use of linear programming? 6. Mention what chase strategy is. 7. What does "A" category indicate in ABC classification? 8. What is use of ISO 9000 series? 9. Mention demand options in aggregate planning. 10. What does six-sigma stand for? 	<p>2020 make up</p> <ol style="list-style-type: none"> 1. What is the relationship between Production and Operations Management? 2. What is green productivity? 3. Define facility layout. 4. Write down the 3 objectives of plant location. 5. Define JIT and its main objective. 6. What is waiting line management? 7. What is duality? 8. Write down two benefits of aggregate planning. 9. What is quality? 10. What is operational strategy?
<p>2019 TU</p> <ol style="list-style-type: none"> 1. Mention any four concepts developed during lean production era. 2. List out the competitive dimensions of the organization. 3. What does value analysis refer to? 4. Provide the concept of location selection. 5. What is the use of linear programming? 6. What are the basic assumptions of assignment model? 7. What is the purpose of transportation model? 8. What is ABC classification? 9. Mention demand options in aggregate planning. 10. Mention the philosophical elements of TQM. 	<p>2018 Tu</p> <ol style="list-style-type: none"> 1. What is Operations Management? 2. What is productivity? 3. Define capacity planning. 4. Write down any four factors affecting the plant location decision. 5. Define degeneracy in linear programming. 6. What is waiting line management? 7. What is duality? 8. Define supply chain management. 9. What is Total Quality Management? 10. What is competitive strategy?
<p>2017 Tu</p> <ol style="list-style-type: none"> 1. Define operations management. 2. What do you mean by continuous production system? 3. Define Concurrent Engineering. 4. Define operations strategy. 5. What is productivity? 6. What is total quality management? 7. What is six sigma? 8. What are the general procedures in Facility Location? 9. What is the transformation process? 10. Define supply chain management. 	<p>2016 TU</p> <ol style="list-style-type: none"> 1. What is intermittent production system? 2. What is design capacity? 3. Give concept on group technology. 4. What do you mean by planned order and open order? 5. Write about center of gravity method. 6. What are 5M of operations resource? 7. Give any four characteristics of continuous production system. 8. What is slack variable and why it is used in LPP? 9. Define unbalanced transportation problem. 10. List four objectives of operations management.

Here are ten more questions that are frequently mentioned in the provided lists:

1. Define Capacity Planning: This question is listed in the 2018 TU and 2017 TU question lists.

2. What is the Transformation Process?: This question is mentioned in the 2018 TU and 2017 TU question lists.
3. What is Concurrent Engineering?: This question is listed in the 2017 TU and 2016 TU question lists.
4. What is JIT (Just-In-Time)?: This question is found in the 2019 TU and 2017 TU question lists.
5. What is Six Sigma?: This question is mentioned in the 2017 TU and 2016 TU question lists.
6. What is the Center of Gravity Method?: This question appears in the 2016 TU and is related to facility location planning.
7. What is the Concept of Location Selection?: This question is listed in the 2019 TU and 2016 TU question lists.
8. What are the General Procedures in Facility Location?: This question is found in the 2016 TU and relates to facility location planning.
9. What are Dependent and Independent Demand?: This question appears in the 2018 TU and relates to demand planning.
10. What are the Characteristics of Continuous Production System?: This question is listed in the 2016 TU and describes the features of a specific production system.

2023 Ans

1. **Operations Management:** It is the administration of business practices aimed at ensuring maximum efficiency within an organization. It involves managing the processes that produce and deliver products and services.
2. **Supply Chain Management:** This involves overseeing and managing the entire flow of goods and services from the raw material stage to the final customer, ensuring that each step is optimized for efficiency and effectiveness.
3. **Service Design:** It is the process of planning and organizing people, infrastructure, communication, and material components of a service in order to improve its quality and the interaction between the service provider and the customer.
4. **Goal of ABC Classification:** The goal is to categorize inventory or items into three classes (A, B, and C) based on their importance, typically measured by their consumption value or frequency of use, to prioritize management focus and resources.
5. **Types of Production Systems:**
 - Job Production: Producing custom, one-off products.
 - Batch Production: Producing items in groups or batches.
 - Mass Production: High-volume production of standardized products.
 - Continuous Production: Uninterrupted production of standardized products, often 24/7.
6. **Philosophical Element of TQM:** Total Quality Management (TQM) is based on the philosophy that quality is the responsibility of all employees and that continuous improvement is necessary for long-term success.
7. **Benefit of JIT (Just-In-Time):** JIT reduces inventory costs by ensuring that materials and products are produced or received only as needed, minimizing waste and storage costs.
8. **Aggregate Planning:** This is the process of developing, analyzing, and maintaining a preliminary, approximate schedule of the overall operations of an organization. It focuses on matching supply with demand over a specific period.

9. Meaning of Duality: In operations management, duality refers to the concept that every operation or activity has a dual effect on both the production process and the overall system. For example, increasing the speed of production might improve output but could also increase defects or maintenance needs.

10. Value Analysis: This is a systematic approach to improving the value of a product or service by evaluating its function and cost. It aims to reduce unnecessary costs while maintaining or improving quality and performance.

Tu 2022(answer)

Here are the answers to your questions:

11. Operations Management: It is the field of management concerned with designing, overseeing, and controlling the production and delivery of goods and services. It focuses on optimizing processes and resources to maximize efficiency and quality.

12. Quality Control Chart: A quality control chart is a graphical tool used to monitor the quality of a process over time. It displays data points plotted in time order, and it helps to identify any variations from the desired quality levels, indicating whether a process is in control or needs adjustments.

13. Quality: Quality refers to the degree to which a product or service meets or exceeds customer expectations. It encompasses various attributes such as performance, reliability, durability, and conformance to specifications.

14. Objective of Assignment Problem: The objective is to find the optimal way to assign a set of tasks or resources to a set of agents or locations to minimize costs or maximize efficiency. It is a type of linear programming problem.

15. Reorder Level and Lead Time:

- Reorder Level: The inventory level at which a new order should be placed to replenish stock before it runs out.
- Lead Time: The amount of time required from placing an order until the receipt of the goods or services.

16. Reason for Product Redesign: Product redesign can be driven by factors such as improving product performance, reducing production costs, responding to customer feedback, incorporating new technologies, or complying with updated regulations.

17. Service in Last Come First Served and Random Order:

- Last Come First Served: This is a service strategy where the most recent customer is served first. Example: A stack of papers where the last paper added is the first one to be reviewed.
- Service in Random Order: Customers are served in no specific order, based on availability and timing. Example: In a busy café, customers are served as their orders are ready, regardless of when they arrived.

18. Seven Tools of Quality:

- Cause and Effect Diagram (Fishbone Diagram): Identifies potential causes of problems.
- Check Sheet: A tool for collecting and analyzing data.
- Control Chart: Monitors process variation over time.
- Histogram: Shows the distribution of data.
- Pareto Chart: Identifies the most important factors in a dataset.
- Scatter Diagram: Shows relationships between two variables.
- Flowchart: Maps out the steps in a process.

19. Dependent and Independent Demand:

- Dependent Demand: Demand for items that are dependent on the demand for other items, such as components needed for manufacturing a product.
- Independent Demand: Demand for items that is not influenced by the demand for other items, such as finished goods purchased by customers.

20. Corporate Strategy: This is a long-term plan designed to achieve a company's major goals and objectives. It involves decisions related to the overall direction of the organization, including market positioning, resource allocation, and growth initiatives.

2021 make up

Here are the brief answers to your questions:

1. Intermittent vs. Continuous Production System:

- **Intermittent Production:** Production processes are not continuous and vary based on demand. Products are made in small batches or job lots, and equipment is often reconfigured for different tasks (e.g., job shop).
- **Continuous Production:** Production runs continuously, often 24/7, to produce large volumes of standardized products with minimal interruptions (e.g., oil refining).

2. Operations Strategy: It is a plan that defines how an organization will use its resources and capabilities to achieve its long-term goals and competitive advantage. It involves decisions related to process design, capacity planning, and supply chain management.

3. Modular Design: This involves designing products or systems in separate, interchangeable modules or components. Each module can be independently designed, manufactured, and replaced, which allows for flexibility and easier customization.

4. Location Strategy: This is the process of determining the best geographic location for a company's operations, including factors such as cost, accessibility, proximity to suppliers and customers, and regional regulations.

5. Use of Linear Programming: Linear programming is used to find the optimal solution for resource allocation problems where the goal is to maximize or minimize a linear objective function subject to linear constraints.

6. Chase Strategy: This aggregate planning strategy involves adjusting production rates or workforce levels to match fluctuations in demand, ensuring that inventory levels remain stable and minimizing excess inventory.

7. "A" Category in ABC Classification: The "A" category represents the most important items, typically those with the highest consumption value or strategic importance. These items require tight inventory control and management.

8. Use of ISO 9000 Series: The ISO 9000 series provides guidelines and standards for quality management systems. It helps organizations ensure they meet customer and regulatory requirements and continuously improve their quality practices.

9. Demand Options in Aggregate Planning:

- **Chase Demand:** Adjust production and inventory levels to match fluctuating demand.
- **Level Production:** Maintain a steady production rate and use inventory to absorb fluctuations in demand.
- **Hybrid Approach:** Combine aspects of both chase and level production strategies.

10. Six Sigma: Six Sigma is a set of techniques and tools for process improvement aimed at reducing defects and variability in processes. The term "six sigma" refers to a statistical measure where processes operate with fewer than 3.4 defects per million opportunities, representing a high level of quality.

2020 make up

Here are the brief answers to your questions:

1. Relationship between Production and Operations Management: Production management is a subset of operations management focused specifically on the process of manufacturing goods. Operations management

encompasses the broader scope of managing all aspects of the production process, including procurement, inventory, quality control, and distribution, to ensure the efficient creation and delivery of products and services.

2. Green Productivity: Green productivity refers to the practice of improving productivity while simultaneously reducing environmental impact. It involves adopting sustainable practices, minimizing waste and resource consumption, and using eco-friendly technologies to enhance overall efficiency and environmental performance.

3. Facility Layout: Facility layout is the arrangement of physical resources, such as equipment, workstations, and storage areas, within a production facility. The goal is to optimize workflow, improve efficiency, and minimize costs by strategically organizing these resources.

4. Objectives of Plant Location:

- **Minimize Costs:** Reduce production and operational costs, including transportation, labor, and material costs.
- **Maximize Accessibility:** Ensure proximity to suppliers, customers, and key markets to facilitate efficient distribution and supply chain management.
- **Optimize Resources:** Leverage local resources, such as skilled labor and raw materials, to enhance production capabilities and operational efficiency.

5. JIT (Just-In-Time): JIT is a production strategy aimed at reducing inventory levels and increasing efficiency by producing and delivering products only as needed. The main objective of JIT is to minimize waste, reduce carrying costs, and improve overall production flexibility.

6. Waiting Line Management: Waiting line management involves analyzing and controlling queues or waiting times in service processes. It focuses on optimizing service efficiency, reducing customer wait times, and managing resources to improve service quality and customer satisfaction.

7. Duality: In operations management, duality refers to the concept that every decision or operation has two sides: a direct impact on production and an indirect impact on other aspects of the system. For example, increasing production speed might improve output but could also lead to higher maintenance costs or increased defects.

8. Benefits of Aggregate Planning:

- **Optimized Resource Utilization:** Helps ensure that resources such as labor, materials, and equipment are used efficiently, reducing costs and minimizing waste.
- **Improved Customer Service:** Balances supply and demand to ensure that customer orders are fulfilled on time, improving overall satisfaction and reliability.

9. Quality: Quality refers to the extent to which a product or service meets or exceeds customer expectations and standards. It encompasses attributes such as performance, reliability, durability, and conformance to specifications.

10. Operational Strategy: Operational strategy is a plan that outlines how an organization will manage its resources, processes, and capabilities to achieve its business objectives and gain a competitive advantage. It involves making decisions about production processes, supply chain management, and other operational activities to support overall corporate goals.

2019 TU

Here are the brief answers to your questions:

1. Concepts Developed During Lean Production Era:

- **Just-In-Time (JIT):** A production strategy that reduces inventory and waste by producing only what is needed when it is needed.
- **Kanban:** A visual scheduling system that controls the flow of materials in the production process.
- **5S:** A workplace organization method involving Sort, Set in order, Shine, Standardize, and Sustain to improve efficiency and reduce waste.

- **Value Stream Mapping:** A tool used to analyze and design the flow of materials and information required to bring a product to the customer.

2. Competitive Dimensions of the Organization:

- **Cost:** Offering products or services at a lower cost than competitors.
- **Quality:** Providing superior products or services with high reliability and durability.
- **Delivery Speed:** Ensuring fast and timely delivery of products or services.
- **Flexibility:** Adapting to changes in customer demands and offering a wide range of products or services.

3. Value Analysis: This refers to a systematic approach to improving the value of a product or service by evaluating its functions and costs. The goal is to enhance performance while minimizing costs, thus increasing overall value.

4. Concept of Location Selection: This involves determining the optimal location for a business or facility based on factors such as cost, accessibility to suppliers and customers, availability of labor, and regional regulations. The aim is to enhance operational efficiency and market reach.

5. Use of Linear Programming: Linear programming is used to find the best possible outcome in a mathematical model with linear relationships, typically to optimize resource allocation, such as minimizing costs or maximizing profits, subject to constraints.

6. Basic Assumptions of Assignment Model:

- Each task is assigned to exactly one resource, and each resource is assigned to exactly one task.
- The cost or time associated with each assignment is known and fixed.
- The objective is to minimize the total cost or time of assignments.
- The problem involves a one-to-one matching between tasks and resources.

7. Purpose of Transportation Model: The transportation model is used to determine the most cost-effective way to transport goods from multiple suppliers to multiple consumers, minimizing the total transportation cost while satisfying supply and demand constraints.

8. ABC Classification: This is an inventory management technique that categorizes items into three classes (A, B, and C) based on their importance or value. Class A items are the most valuable, Class B items are of moderate value, and Class C items are the least valuable, guiding inventory control efforts.

9. Demand Options in Aggregate Planning:

- **Chase Demand:** Adjust production and inventory levels to match demand fluctuations.
- **Level Production:** Maintain a steady production rate and use inventory to absorb demand variations.
- **Hybrid Approach:** Combine chase and level production strategies to balance production and inventory levels.

10. Philosophical Elements of TQM (Total Quality Management):

- **Customer Focus:** Prioritizing customer needs and satisfaction in all aspects of the organization.
- **Continuous Improvement:** Encouraging ongoing efforts to improve processes, products, and services.
- **Employee Involvement:** Engaging all employees in quality improvement efforts and decision-making.
- **Process Approach:** Managing and improving processes to enhance overall quality and efficiency.

2018

Here are the brief answers to your questions:

1. Operations Management: Operations management is the administration of business practices aimed at ensuring maximum efficiency in the production and delivery of goods and services. It involves managing resources, processes, and systems to meet customer demands while achieving organizational goals.

2. Productivity: Productivity measures the efficiency of production. It is often calculated as the ratio of outputs (goods and services) to inputs (resources such as labor, materials, and capital). Higher productivity indicates more efficient use of resources.

3. Capacity Planning: Capacity planning involves determining the production capacity needed by an organization to meet future demand. It includes assessing current capabilities and forecasting future needs to ensure that the facility can produce the required amount of goods or services.

4. Factors Affecting Plant Location Decision:

- Proximity to Markets: Being close to customer bases to reduce transportation costs and improve delivery times.
- Availability of Resources: Access to raw materials, skilled labor, and utilities.
- Cost of Land and Facilities: The expense involved in acquiring or leasing property and constructing facilities.
- Regulatory Environment: Local regulations, taxes, and incentives that could impact operations and costs.

5. Degeneracy in Linear Programming: Degeneracy occurs when a linear programming problem has multiple optimal solutions, or when more than one solution satisfies the constraints but some of the basic variables are zero in the optimal tableau. It can complicate the solution process and interpretation.

6. Waiting Line Management: Waiting line management involves analyzing and optimizing the queues or waiting times in service systems to improve efficiency and customer satisfaction. It includes strategies for managing service capacity, reducing wait times, and improving service delivery.

7. Duality: In operations management and linear programming, duality refers to the concept that every linear programming problem (the primal) has a corresponding dual problem. Solutions to the dual provide bounds and insights into the solutions of the primal problem, and vice versa.

8. Supply Chain Management: Supply chain management involves the coordination and management of all activities and processes involved in the production and distribution of goods and services, from raw materials to the final customer. It aims to optimize the flow of materials, information, and finances across the supply chain to enhance efficiency and customer satisfaction.

9. Total Quality Management (TQM): TQM is a comprehensive management approach focused on improving quality and performance at all organizational levels. It involves continuous improvement, customer focus, employee involvement, and process management to enhance overall quality and efficiency.

10. Competitive Strategy: Competitive strategy refers to the plan an organization uses to gain a competitive advantage over its rivals. It involves making strategic choices related to cost leadership, differentiation, and market focus to achieve superior performance and market positioning.

2017 TU

1. Operations Management: Operations management involves planning, organizing, and overseeing the production and delivery of goods and services. Its goal is to ensure that operations are efficient, effective, and aligned with organizational objectives.

2. Continuous Production System: A continuous production system is a manufacturing process where production runs non-stop, often 24/7, to produce large quantities of standardized products. It is characterized by a constant flow of materials and products, minimizing downtime and maintaining high efficiency.

3. Concurrent Engineering: Concurrent engineering is a collaborative approach to product development where design, manufacturing, and other processes are conducted simultaneously rather than sequentially. This method aims to reduce time-to-market and improve product quality by integrating various functions early in the development process.

- 4. Operations Strategy:** Operations strategy is a plan that outlines how an organization will use its resources, processes, and capabilities to achieve its long-term business goals. It includes decisions related to production, supply chain management, quality, and technology to gain a competitive advantage.
- 5. Productivity:** Productivity measures how efficiently resources are used to produce outputs. It is calculated as the ratio of output (goods and services) to input (resources such as labor, materials, and capital). Higher productivity indicates better use of resources.
- 6. Total Quality Management (TQM):** TQM is a management approach focused on continuous improvement of processes, products, and services to achieve high levels of quality. It emphasizes customer satisfaction, employee involvement, and a systematic approach to improving quality across all areas of an organization.
- 7. Six Sigma:** Six Sigma is a set of techniques and tools for process improvement aimed at reducing defects and variability. The term refers to a statistical measure where processes operate with fewer than 3.4 defects per million opportunities, signifying high quality and consistency.
- 8. General Procedures in Facility Location:**
- **Identify Key Factors:** Determine the factors important for the location decision, such as cost, resource availability, and proximity to markets.
 - **Evaluate Potential Sites:** Analyze and compare different locations based on the identified factors.
 - **Cost-Benefit Analysis:** Assess the costs and benefits of each location to determine the most cost-effective choice.
 - **Select and Implement:** Choose the optimal location and plan the implementation of the facility setup.
- 9. Transformation Process:** The transformation process is the set of activities that convert inputs (such as raw materials, labor, and capital) into outputs (products or services) through various operations. It involves the processes and technologies used to add value and meet customer needs.
- 10. Supply Chain Management:** Supply chain management involves the coordination and integration of all activities and processes involved in the production and delivery of goods and services, from raw material sourcing to final product delivery to customers. It aims to optimize the flow of materials, information, and finances to improve efficiency and customer satisfaction.

2016

Here are the brief answers to your questions:

- 1. Intermittent Production System:** This production system is characterized by the production of goods in small batches or job lots based on specific orders. It is flexible and can handle a variety of products but is less efficient for high-volume production due to setup times and frequent changes in production runs.
- 2. Design Capacity:** Design capacity is the maximum output that a facility or system is theoretically capable of achieving under ideal conditions. It represents the upper limit of production capability based on the design specifications of the equipment and processes.
- 3. Group Technology:** Group technology is a manufacturing philosophy that involves grouping similar products or components into families and using the same machines and processes for their production. This approach aims to increase efficiency, reduce setup times, and improve quality by standardizing production processes for related items.
- 4. Planned Order vs. Open Order:**
- **Planned Order:** An order that is scheduled to be placed in the future based on forecasts or production plans. It represents a future requirement for materials or products.
 - **Open Order:** An order that has already been placed and is awaiting fulfillment or delivery. It is an active order currently in the process of being completed.

5. Center of Gravity Method: The center of gravity method is a technique used in facility location planning to determine the optimal location for a facility based on minimizing transportation costs. It involves calculating a weighted average of the locations of demand points, with weights proportional to the volume of demand or transportation costs.

6. 5M of Operations Resource:

- **Manpower:** Human resources or labor involved in operations.
- **Materials:** Raw materials and components used in production.
- **Machines:** Equipment and machinery used in the manufacturing process.
- **Methods:** Procedures and processes used to produce goods or services.
- **Money:** Financial resources required for operations, including investments and operating costs.

7. Characteristics of Continuous Production System:

- **High Volume:** Produces large quantities of standardized products.
- **Minimal Setup Time:** Equipment and processes are designed for continuous operation with minimal interruptions.
- **Constant Flow:** Materials and products move continuously through the production process.
- **Automated Processes:** High levels of automation are often used to maintain efficiency and consistency.

8. Slack Variable: In linear programming, a slack variable is added to a less-than-or-equal-to constraint to convert it into an equation. It represents the unused portion of a resource or capacity. Slack variables are used to ensure that constraints are met and to help find feasible solutions to the optimization problem.

9. Unbalanced Transportation Problem: An unbalanced transportation problem occurs when the total supply does not equal the total demand in a transportation problem. This imbalance must be addressed by adding dummy supply or demand points to balance the problem before applying transportation algorithms.

10. Objectives of Operations Management:

- **Efficiency:** Optimize the use of resources to minimize costs and maximize productivity.
- **Quality:** Ensure that products and services meet or exceed customer expectations and standards.
- **Flexibility:** Adapt to changes in demand, production requirements, and market conditions.
- **Customer Satisfaction:** Deliver products and services on time and at a competitive cost to meet customer needs.