Production and Operation Management

Important questions

1.Merits and demerits of production and operation management

Advantages:

1. Efficiency Improvement: POM helps organizations streamline their production processes, leading to increased efficiency and reduced waste.

2. Quality Control: POM emphasizes quality management, ensuring that products or services meet or exceed customer expectations.

3. Resource Optimization: POM involves careful planning and allocation of resources such as manpower, materials, and machinery.

4. Risk Management: POM helps identify potential risks in production and operations and develop strategies to mitigate them.

5. Innovation and Technology Integration: POM encourages the adoption of new technologies and innovative practices, leading to improved processes, automation, and competitiveness in the market.

Disadvantages:

1. Initial Implementation Costs: Implementing POM strategies and systems may require significant initial investments in technology, training, and process redesign.

2. Resistance to Change: Employees may resist changes in processes or technologies associated with POM, leading to resistance and potential disruptions during the implementation phase.

3. Complexity: POM involves dealing with complex systems and processes. Managing these complexities can be challenging and may require specialized knowledge and expertise.

4. Overemphasis on Efficiency: In pursuit of efficiency, organizations may sometimes sacrifice other important factors, such as innovation or flexibility..

5. Dependency on Supply Chain: Many organizations rely on complex global supply chains.

6. Environmental Impact: While POM can optimize processes, it may not always prioritize environmental sustainability. .

Note: Write same points for objectives, importance wherever they ask about Production And operation management

Most of the time points won't change

2. Importance and scope of PPC

Scope of PPC (Production Planning and Control):

1. Optimizing Resource Utilization: PPC helps in the efficient utilization of resources such as manpower, machines, and materials.

2. Meeting Customer Demand: By forecasting demand and planning production accordingly, PPC helps in meeting customer orders and demands on time.

3. Cost Control: Effective PPC helps in controlling production costs by optimizing the use of resources, reducing wastage, and avoiding unnecessary downtime.

4. Quality Improvement: Through the implementation of quality control measures, PPC contributes to the improvement of product quality

5. Efficient Inventory Management: PPC plays a crucial role in managing inventory levels efficiently

6. Flexibility and Adaptability: PPC allows organizations to be more flexible and adaptive to changes in market conditions

7.Continuous Improvement: The feedback loop in PPC enables organizations to learn from past experiences and continuously improve their production processes.

Importance of PPC

1. Customer Satisfaction Meeting customer demands on time and delivering high-quality products contribute to customer satisfaction.

2. Competitive Advantage: Efficient production planning and control give organizations a competitive edge by enabling them to produce goods in a timely and cost-effective manner.

3. Cost Reduction: By optimizing resource utilization, minimizing waste, and controlling inventory levels, PPC helps in reducing overall production costs.

4. Enhanced Decision-Making: PPC provides valuable data and insights that aid in decision-making.

5. Risk Management: Through effective planning and control, PPC helps identify and mitigate risks in the production process.

6. Efficient Workflow: PPC ensures a smooth and efficient workflow by coordinating various production activities

7. Regulatory Compliance: In industries where adherence to regulations and standards is critical, PPC helps ensure that production processes comply with relevant guidelines.

3.Factors Influencing While selecting Plant Location

Here are some key factors that commonly influence the decision-making process when choosing a plant location:

1. Proximity to Raw Materials - Access to raw materials is crucial for manufacturing industries. Choosing a location close to the source of raw materials helps reduce transportation costs and ensures a stable supply chain.

2. Market Access and Proximity to Customers:- Being close to the target market can reduce transportation costs and lead times. For industries with perishable goods or those where timely delivery is crucial, proximity to customers is a significant factor.

3. Transportation Infrastructure:- Availability and efficiency of transportation infrastructure, including roads, railways, ports, and airports, impact the ease of moving raw materials and finished goods. A well-developed transportation network can reduce logistics costs.

4. Labor Availability and Costs: The availability of skilled and unskilled labor in the region influences the decision. Labor costs, including wages, benefits, and overall labor market conditions, are important considerations for cost-effective production.

5. Energy Costs and Availability: - Access to reliable and affordable energy sources is critical for manufacturing operations. Industries with

high energy consumption often consider the cost and reliability of the local energy supply.

6. Government Regulations and Incentives:- Regulatory requirements, environmental regulations, and government incentives or subsidies can influence the choice of plant location. Some regions offer tax incentives, grants, or other benefits to attract businesses.

7. Political Stability: The political stability of a region is crucial for long-term business operations. Political unrest or uncertainty can pose risks to the continuity of operations.

8. Climate and Environmental Factors:- Climate conditions can impact certain industries. For example, industries relying on temperature-sensitive processes may choose locations with suitable climates. Environmental factors, such as air and water quality, also play a role.

9. Infrastructure and Utilities:- Availability and reliability of essential infrastructure and utilities, such as water, electricity, and telecommunications, are important considerations for plant location

10. Access to Technology and Innovation Hubs: - Industries that rely on innovation and technology may benefit from being located near research and development centers, universities, or technology hubs.

11. Competitive Landscape: - The presence of competitors and the overall competitive landscape in a region can influence the decision. Being close to competitors may lead to sharing common suppliers or gaining insights into industry trends.

12. Risk Factors and Natural Disasters: - Assessing the risk of natural disasters, such as earthquakes, floods, or hurricanes, is crucial for ensuring business continuity and minimizing potential disruptions.

4.Inventory Management Functions

Functions of Inventory Control:

1. Demand Forecasting: Forecasting future demand for products is a crucial function of inventory control.

2.Ordering and Reordering: Inventory control involves establishing reorder points and order quantities. When the inventory level drops to a predetermined reorder point, new orders are placed to replenish stock.

3.Setting Stock Levels: Determining the appropriate levels of inventory is a key function.

4. ABC Analysis: Inventory items are often classified into categories based on their importance.

5. Stock Valuation: Inventory control involves assigning values to stock for financial reporting purposes. Methods such as FIFO (First-In-First-Out) or LIFO (Last-In-First-Out) are used for inventory valuation.

6. Record Keeping and Documentation: Maintaining accurate records of inventory levels, transactions, and movements is crucial. This helps in tracking stock, identifying discrepancies, and providing a clear audit trail.

7. Order Processing: Efficient processing of orders, including order picking and packing, is a part of inventory control. Streamlining order processing contributes to timely deliveries and customer satisfaction.

8.Supplier Collaboration: Collaborating with suppliers to ensure timely and accurate deliveries is a key function. Establishing effective communication channels helps in managing the supply chain efficiently.

9. Monitoring and Analysis: Continuous monitoring of inventory levels, turnover rates, and other relevant metrics is essential. Analysis of this data helps in identifying trends, making informed decisions, and optimizing inventory levels.

10. Quality Control: Inventory control involves monitoring the quality of incoming goods and ensuring that defective or substandard items are identified and addressed promptly.

5.Factors Affecting Inventory Control

1. Demand Variability: Fluctuations in customer demand can significantly impact inventory control. Understanding and managing demand variability is crucial for setting appropriate stock levels.

2. Lead Time: The time it takes for a new order to be delivered impacts inventory control. Longer lead times may necessitate higher safety stock levels to prevent stockouts during the replenishment period.

3.Ordering Costs: The costs associated with placing orders, such as order processing, transportation, and handling costs, influence inventory decisions. Balancing these costs with holding costs is crucial.

4. Holding Costs: The costs associated with holding and storing inventory, including warehouse space, insurance, and security, impact the overall cost of inventory. Minimizing holding costs while maintaining adequate stock is a key consideration.

5. Economic Order Quantity (EOQ):EOQ is the optimal order quantity that minimizes total inventory costs, considering ordering costs and holding costs. Calculating and managing EOQ is a key factor in inventory control.

6. Technology and Automation: The use of technology, such as inventory management systems and automation, can significantly impact inventory control. Automated systems can improve accuracy, efficiency, and real-time tracking.

7. Supplier Performance: The reliability and performance of suppliers influence inventory control. Consistent and timely deliveries from suppliers contribute to maintaining optimal inventory levels.

8. Seasonal Demand: Industries with seasonal demand patterns must factor in these fluctuations when managing inventory. Adjusting stock levels based on seasonal trends helps avoid excess or insufficient inventory.

9. Supply Chain Disruptions: Events such as natural disasters, geopolitical issues, or disruptions in the supply chain can impact the availability of inventory. Building resilience and contingency plans are crucial in such situations.

10. Technology Trends- Advances in technology, such as RFID (Radio-Frequency Identification) or IoT (Internet of Things), can provide real-time visibility into inventory levels and improve the accuracy of tracking and management.

11. Regulatory Compliance:Compliance with regulatory requirements, especially in industries with specific regulations regarding inventory management, influences inventory control practices.

12. Customer Service Level Requirements:The desired level of customer service, including factors like order fulfillment speed and product availability, influences inventory decisions.

6.Types of Maintenance

1.Preventive Maintenance (PM): To proactively prevent equipment failure and reduce the likelihood of breakdowns.

2. Corrective Maintenance (CM):To address equipment failures or breakdowns and restore them to working condition.

3. Predictive Maintenance (PdM):To predict when equipment failure is likely to occur, allowing for maintenance activities to be scheduled just in time.

4. Reliability-Centered Maintenance (RCM):To optimize the maintenance strategy based on the criticality and impact of each asset on the overall operations.

5. Breakdown Maintenance (BM) or Run-to-Failure: To run equipment until it fails, then repair or replace it.

6. Total Productive Maintenance (TPM): To involve all employees in the maintenance process, emphasizing a proactive and holistic approach to equipment care.

7. Condition-Based Maintenance (CBM):To perform maintenance activities based on the actual condition of the equipment, as indicated by monitoring and diagnostic tools.

8. Scheduled Maintenance: To perform routine maintenance activities at predetermined intervals.

2M Questions

Search ans on Google

Define

- Production management
- Operation management
- Waste management
- EOQ
- Control chart
- PPC
- Production and operation management
- Plant Layot
- TQM
- ABC analysis

5M

1.Importance of Waste management

- Reduced Pollution
- preservation of Ecosystems
- Public Health
- Resource Conservation
- Reduced Greenhouse Gas Emissions
- Sustainable Development

2.Principles/Objectives of TQM

- Customer Focus
- Continuous Improvement
- Employee Involvement
- Supplier Relationships
- Data-Driven Decision Making
- Training and Development

3.Principles of plant layout

- Optimal Space Utilization
- Flexibility and Adaptability
- Accessibility and Visibility
- Minimization of Wastes
- Communication and Collaboration
- Cost-Effective Design

Most important questions /topic are covered

Points are same for few topics so write related points

All the Best for exams

Do your Best!!!!!!!