# CPIM Practice Exam (Sample)

## Study Guide


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# Questions

**1. What is the definition of a reverse auction?**

**A. An auction for used inventory**

**B. A public bidding process for buyers**

**C. An auction where suppliers underbid each other**

**D. A fixed price sale**

**2. Which scenario requires finished goods safety stock the least?**

**A. For a line of less popular board games at a central distribution center**

**B. For a popular line of make-to-order garage doors**

**C. For server cards sold just to corporate customers who order under strict quantity contracts**

**D. For dry pasta held at a regional distribution center**

**3. Which category do product recalls fall under in cost classification?**

**A. Prevention Costs**

**B. External Failure Costs**

**C. Internal Failure Costs**

**D. Appraisal Costs**

**4. What improvement method focuses specifically on bottlenecks in production?**

**A. Lean manufacturing**

**B. Continuous improvement**

**C. Six Sigma**

**D. Theory of Constraints**

**5. How is the Seasonal Index calculated?**

**A. Period Average Demand - Average Demand for All periods**

**B. Period Average Demand + Average Demand for All periods**

**C. Period Average Demand / Average Demand for All periods**

**D. Average Demand for All periods / Period Average Demand**

**6. What is the Net Requirements Formula?**

- **A. Gross Requirements + Scheduled Receipts - Available Inventory**
- **B. Scheduled Receipts - Gross Requirements + Safety Stock**
- **C. Gross Requirements - Scheduled Receipts - Prior Projected Available**
- **D. Projected Available + Gross Requirements - Scheduled Receipts**

**7. What does effective level of service lead to in inventory management?**

- **A. Increased production downtime**
- **B. Higher customer satisfaction**
- **C. More complex inventory controls**
- **D. Reduction in staff requirements**

**8. What process is critical for ensuring completeness in order staging?**

- **A. Verifying item locations and availability**
- **B. Calculating shipping costs based on weight**
- **C. Assembling items and checking for errors**
- **D. Documenting incoming inventory**

**9. What does the Six Sigma methodology aim to accomplish?**

- **A. Improve employee satisfaction**
- **B. Decrease process variation and improve product quality**
- **C. Enhance product design and aesthetics**
- **D. Increase production speed without quality checks**

**10. What does flow control primarily focus on in a production control system?**

- **A. Monitoring financial input costs**
- **B. Setting production rates and feeding work into production**
- **C. Developing employee performance metrics**
- **D. Managing supplier relationships**

# Answers

1. C
2. B
3. B
4. D
5. C
6. C
7. B
8. C
9. B
10. B

# Explanations

## 1. What is the definition of a reverse auction?

**A. An auction for used inventory**

**B. A public bidding process for buyers**

**C. An auction where suppliers underbid each other**

**D. A fixed price sale**

**A reverse auction is characterized by a competitive bidding process where suppliers compete against one another to offer the lowest price for their goods or services. Unlike traditional auctions, where buyers bid higher amounts, the dynamics of a reverse auction shift in favor of the buyer, who sets the stage for suppliers to lower their bids in order to win the business. This format encourages suppliers to offer their most competitive pricing in a transparent and real-time environment, ultimately benefiting the buyer with reduced costs. In contrast, the other choices do not accurately represent the concept of a reverse auction. An auction for used inventory focuses on the sale of secondhand items rather than the competitive pricing aspect among suppliers. A public bidding process for buyers might imply a situation where multiple buyers are bidding, which is not how reverse auctions operate. A fixed price sale does not involve bidding at all, eliminating the competitive element inherent to reverse auctions.**

## 2. Which scenario requires finished goods safety stock the least?

**A. For a line of less popular board games at a central distribution center**

**B. For a popular line of make-to-order garage doors**

**C. For server cards sold just to corporate customers who order under strict quantity contracts**

**D. For dry pasta held at a regional distribution center**

**In this context, the scenario involving the popular line of make-to-order garage doors requires finished goods safety stock the least primarily due to the nature of the order process and production strategy. Make-to-order processes inherently involve producing items only after an order is received, which means that there is no need to hold finished goods inventory. This production strategy aligns with customer demand and helps minimize excess inventory, leading to reduced carrying costs and less risk of obsolescence. Since the garage doors are produced specifically for incoming orders, the need for safety stock is minimized because there is a direct correlation between customer orders and production. In contrast, the other scenarios involve products that may face fluctuations in demand or require inventory to meet expected sales, hence necessitating safety stock. Holding finished goods safety stock in those cases is more critical to ensure customer satisfaction and minimize stockouts.**

## 3. Which category do product recalls fall under in cost classification?

**A. Prevention Costs**

**B. External Failure Costs**

**C. Internal Failure Costs**

**D. Appraisal Costs**

**Product recalls are classified as external failure costs because they occur after a product has been delivered to the customer and are a direct result of product defects or non-conformance to quality standards. This classification focuses on the costs associated with defects that are discovered after the product is in the hands of the consumer, which can include expenses related to recalling the products, customer notifications, and potential legal liabilities stemming from the defect. By addressing external failures effectively, organizations can minimize their financial impact and protect their brand reputation. In contrast, prevention costs refer to expenses incurred to prevent defects from occurring in the first place, such as quality training and process improvements. Internal failure costs are associated with defects found before the product reaches the customer, such as rework and scrap. Appraisal costs are incurred to inspect and test products to ensure their quality prior to delivery, including testing and audits. These other categories do not apply to the scenario of product recalls, as they occur after the product has already reached customers.**

## 4. What improvement method focuses specifically on bottlenecks in production?

**A. Lean manufacturing**

**B. Continuous improvement**

**C. Six Sigma**

**D. Theory of Constraints**

**The Theory of Constraints (TOC) is a critical improvement method that specifically targets bottlenecks in a production process. This approach is centered on the idea that every system has at least one constraint that limits its overall performance. By identifying and managing this bottleneck, organizations can significantly enhance their efficiency and throughput. TOC works on the principle that the overall performance of a process is determined by its weakest link. The method involves five focusing steps: identifying the constraint, exploiting the constraint, subordinating everything to the constraint, elevating the constraint, and re-evaluating the system. By following these steps, organizations can systematically improve the flow of production and increase output while minimizing waste. In contrast, other methods like lean manufacturing aim to eliminate waste and streamline processes broadly, Continuous Improvement focuses on making small, incremental changes over time, and Six Sigma seeks to reduce variability and defects in processes but does not specifically target bottlenecks. Each of these methods has its strengths, but the Theory of Constraints uniquely addresses the critical issue of bottlenecks, making it the appropriate answer for this question.**

## 5. How is the Seasonal Index calculated?

**A. Period Average Demand - Average Demand for All periods**

**B. Period Average Demand + Average Demand for All periods**

**C. Period Average Demand / Average Demand for All periods**

**D. Average Demand for All periods / Period Average Demand**

**The calculation of the Seasonal Index is a fundamental step in understanding seasonal variations in demand. The Seasonal Index helps businesses to compare demand during a specific period to the average demand across all periods. It indicates how much higher or lower the demand is during a particular season compared to the overall average. When you calculate the Seasonal Index, you divide the Period Average Demand by the Average Demand for All periods. This ratio provides a direct comparison: if the resulting index is greater than 1, it indicates that the demand during that particular period is higher than the average demand, whereas an index of less than 1 suggests below-average demand. This calculation is crucial for firms looking to forecast seasonal patterns effectively, enabling them to make informed decisions about inventory management, staffing, and promotional strategies during peak or low-demand seasons. By having this insight, businesses can better align resources with expected market conditions. The other options provided do not accurately represent the methodology for calculating the Seasonal Index, which specifically involves a division of the demands to understand relative performance against the average.**

## 6. What is the Net Requirements Formula?

**A. Gross Requirements + Scheduled Receipts - Available Inventory**

**B. Scheduled Receipts - Gross Requirements + Safety Stock**

**C. Gross Requirements - Scheduled Receipts - Prior Projected Available**

**D. Projected Available + Gross Requirements - Scheduled Receipts**

**The Net Requirements Formula is foundational in the context of material requirements planning (MRP). It helps organizations determine the actual quantity of items needed for production after accounting for existing inventory and incoming supplies. The correct formula for calculating net requirements is based on the necessary inputs: gross requirements, scheduled receipts, and prior projected available inventory. The gross requirements represent the total demand for an item. Scheduled receipts are the orders that are expected to arrive, which will increase available inventory, while the prior projected available inventory reflects what is already available for use. Thus, the correct formulation—gross requirements minus scheduled receipts and prior projected available—gives the actual net requirements needed to meet production demands. This approach ensures that businesses only order what they genuinely need to fill in the gaps created by current inventory and expected incoming resources, optimizing their inventory management and reducing excess stock costs. By understanding this formula, professionals can effectively plan for production and procurement needs, ensuring they have the right materials when they are needed without overstocking or creating shortages.**

## 7. What does effective level of service lead to in inventory management?

**A. Increased production downtime**

**B. Higher customer satisfaction**

**C. More complex inventory controls**

**D. Reduction in staff requirements**

**The correct answer is that an effective level of service leads to higher customer satisfaction. In inventory management, providing a reliable and consistent level of service means that customers can expect to receive their products when they need them, which fulfills their demands and expectations. This reliability fosters trust and loyalty, resulting in a positive experience that can lead to repeat business and positive word-of-mouth referrals. When customers are satisfied with the service level, they are more likely to continue purchasing from a company, contributing to a stable sales environment and potentially increasing market share. This is essential for businesses aiming to build strong relationships with their customers and maintain a competitive edge in the market. The other options touch on aspects that do not align with the concept of effective service levels. For example, increased production downtime typically stems from operational inefficiencies or poor inventory practices, which would likely detract from customer satisfaction. More complex inventory controls may be a byproduct of trying to manage an effective service level, but that complexity is not a direct outcome of service effectiveness. Additionally, a reduction in staff requirements does not directly correlate with improved service; in some cases, higher service levels might require more staffing to handle increased customer interactions or order fulfillment.**

## 8. What process is critical for ensuring completeness in order staging?

**A. Verifying item locations and availability**

**B. Calculating shipping costs based on weight**

**C. Assembling items and checking for errors**

**D. Documenting incoming inventory**

**The process of assembling items and checking for errors is critical for ensuring completeness in order staging. When items are assembled, it provides an opportunity to verify that all necessary components are present and that they meet the quality standards required for fulfillment. This verification helps to prevent discrepancies that could lead to incomplete shipments. Ensuring that the right items are assembled correctly directly contributes to customer satisfaction and operational efficiency. Verifying item locations and availability, although important for inventory management, primarily focuses on ensuring that the items exist and are in the right place rather than confirming their completeness for processing an order. Calculating shipping costs based on weight is necessary for logistics and financial planning but does not address the completeness of the order itself. Documenting incoming inventory is essential for tracking and accounting purposes but does not impact the immediate process of staging orders for shipment.**

## 9. What does the Six Sigma methodology aim to accomplish?

**A. Improve employee satisfaction**

**B. Decrease process variation and improve product quality**

**C. Enhance product design and aesthetics**

**D. Increase production speed without quality checks**

**The Six Sigma methodology primarily aims to decrease process variation and improve product quality. This is rooted in its focus on identifying and eliminating defects in processes, which enhances overall performance and ensures that products meet quality standards. By using statistical tools and techniques, Six Sigma seeks to control and improve processes, making them more predictable and effective. While employee satisfaction can be a beneficial outcome of improved processes, it is not the central goal of Six Sigma. Enhancing product design and aesthetics may contribute to customer satisfaction but is not the primary focus of the methodology, which is grounded in process improvement and defect reduction. Similarly, increasing production speed without quality checks runs counter to the principles of Six Sigma, which emphasizes quality and consistency over simply speeding up processes. Thus, the correct choice reflects the hallmark objectives of Six Sigma in striving for minimal defects and high-quality outputs.**

## 10. What does flow control primarily focus on in a production control system?

**A. Monitoring financial input costs**

**B. Setting production rates and feeding work into production**

**C. Developing employee performance metrics**

**D. Managing supplier relationships**

**Flow control in a production control system primarily emphasizes setting production rates and efficiently feeding work into the production process. This focus is essential because it ensures that materials and tasks move smoothly through each stage of production without bottlenecks or delays. By managing the flow of work in this way, a production system can achieve optimal efficiency, reduce lead times, and meet customer demand more effectively. Setting production rates helps in matching the output with market demand, enabling effective scheduling and resource allocation. Feeding work into production at the right time prevents overloading or underutilization of resources, which is crucial for maintaining a balanced workflow and ensuring that production targets are met consistently. This coordinated approach is vital in achieving operational goals and improving overall productivity in a manufacturing environment.**